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WEEKLY BULLETIN

Forest Service - Washington Office

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U. S. Department of Agriculture

POLICY LETTERS FROM THE FORESTER

NO. 5

NATIONAL PARKS

One of the factors most important to the success of the National Forest enterprise is stability. We have been seeking for a decade or more to secure boundaries of the public forests that would be permanent and become known to the public. Every boundary change is unsettling. And that is why in making consolidations between forests, or interforest administrative combinations, I have been reluctant to change names or take other action that would require a proclamation. It is very natural, therefore, that the Forest officers are disturbed by the possibility of a new form of reservation to be created here and there out of the National Forests, that if carried as far as some would like would disrupt the integrity of the Forests, render uncertain future plans, and make for instability. Certainly such a result would follow an unwise policy of National Park extension; it will follow inevitably a failure to have a definite National Park policy. It is chiefly the apprehension of the possibility of turning into National Parks, without proper basis of policy, very numerous areas now in National Forests, that is troubling the Forest officers and preventing in some cases, perhaps, their viewing the National Park problem from the broadest standpoint. Certainly a permanent and stable policy must be settled, and that soon, if very obvious difficulties are to be avoided. This letter can not finally settle the matter, but it may I hope clarify the situation, and show how we are viewing the matter here and what I am trying to do to bring about a settlement.

Our National Parks

The policy of National Parks was initiated with the establishment of the Yellowstone in 1871. The conception of the early advocates of National Parks was that certain areas of supreme scenic interest should be set aside and for all time devoted to the enjoyment of the public. This conception is splendid. It has the support of the whole Nation. It has had the support of all foresters and the friends of forestry. The policy was clearly recognized by the Forestry Commission of the National Academy of Sciences in 1896 which recommended the establishment of about 20 million acres of National Forest, and that the Grand Canyon and Mount Ranier be set aside as National Parks. The Forest Service has consistently favored the National Park principle. It was a factor in securing the passage of legislation to establish a service and appropriations for the better administration of the Parks. It has advocated for years the establishment of the Grand Canyon National Park. It has stood squarely behind both the principle of National Parks and the necessity to guard the Parks with the greatest care from commercialization. I mention these facts because it has been charged that foresters are not interested in Parks, and that our own organization has been unfriendly to the conception of Parks. Let it be clearly understood that we not only favor that principle but that we will earnestly support it in practice.

National Park Controversies

There are several reasons why a portion of the public, including many of the friends of forestry, believe today that the foresters are not real supporters of the Park movement. In the first place, there has always been among some a feeling that silviculture and park development are inconsistent. Even among those who most effectively supported the National Forests during the early fights were persons more interested in conserving the beauty of the mountain slopes than in economic forestry. They felt that the cutting of the timber would deface the landscape; lumber operations would leave a hideous scar. On the other hand, the fear of the West in the early days was that the forest reserves would be closed to development, that the timber and other resources would not be used. Foresters maintained that the two purposes could be achieved together, just as has been done in France where the people love their forests as no other nation. It was essential to emphasize that the "forest reserves" were for use, to prevent loss, waste, and local industrial impoverishment, and to build up and sustain industries. Our public handbook was called the "Use Book." The park and recreation features were at first not given prominence. Many persons assumed that our chief and only interest was in timber sales, grazing, and other commercial usds.

Several specific incidents gave an excuse for those who distrusted forestry to spread the idea that foresters were not competent to handle pure recreation areas. The Adirondack experiment in 1899 by Cornell University involved a clear cutting of certain areas, followed by planting. This gave rise to a vigorous controversy and the determination not to open the Adirondack Preserve to cutting of any kind; that is, to exclude silviculture entirely. Forestry could not be trusted because the Cornell experiment seemed to indicate that it involved, at times at least, clear cutting; and that the people of New York did not want.

A second incident was the controversy over Hetch-Hetchy in 1908 to 1910. The Department of Agriculture concurred with the Department of the Interior that the city of San Francisco should be permitted to develop that source of water supply. Mr. Pinchot has been repeatedly attacked for his position in that matter and very unjust conclusions drawn regarding his attitude toward Parks. This in spite of his repeated public statements that he was absolutely opposed to timber sales and similar commercial uses of the Yosemite and other Parks.

Other controversies have arisen over the question of whether certain National Forest areas should be made into Parks. The very questions raised by the Forest Service in considering many proposals for Parks, and our opposition to certain measures that we believed unwise both from the forest and park standpoints make an occasion for those favoring these particular enterprises to attack us and to place a false construction on our action.

Still again the statements of many foresters themselves have misled the public. A short time ago at a meeting of foresters in New Hampshire, a representative of a large woman's organization made the statement that she was conscious that forestry "was very practical, involving only the use and perpetuation of the resources, and did not give consideration to the preservation of beauty of the forests." She had received her impressions by talking with foresters.

Still again, in connection with the establishment of the Park Service: while we urged the creation of the new organization, we called attention to the inevitable difficulties of having the Park and Forest Services in separate Departments, and felt that the Department of Agriculture was the place for both, though they should be separate bureaus. Many foresters outside the Service advocated that the Parks be placed under the Forest Service. This gave rise to the idea that we were seeking to obtain control over the Parks, which was contrary to our declared policy.

The fact is that there is a feeling very prevalent that the foresters are not in sympathy with Parks in general or National Parks in particular, that our principles of forest administration are not consistent with park administration, that to obtain real security for the preservation of the beauty of certain areas and the right kind of development of them they must be placed under a separate administration that has the development from the Park standpoint alone in view. This lack of confidence is not confined to those who are unfriendly to us; it is existent in the minds of many who have been and are today the most vigorous champions of the National Forests. It is essential that our real position, our real purposes, our real methods be made crystal clear.

Some Fundamental Principles

We should recognize at the start that certain areas may properly be devoted wholly to scenic and recreation use and development. The fact that economic forestry and scenic preservation are not inconsistent does not mean that they should be combined. The people want certain areas kept wholly detached from economic development. They want to keep some places where they can enjoy nature untouched. This is the very fundamental idea of National Parks.

Conditions in this country are not like those in Europe, where there are limited forest resources. Here economic conditions permit a more liberal closing of public lands to development, and it will be a long time before the National Parks will have to be drawn upon for raw materials, at least if a sane Park policy is adhered to. Another fact of importance is that forestry today is crude. We cannot practice a silviculture like that of France. In the first place the public does not do its own logging; lumbermen do it. It has to be on such a scale and under such methods as to pay, from a lumberman's standpoint. This is the crux of the Adirondack puzzle. Economic conditions do not require cutting the state timber; economic conditions do not permit handling it the way the people would require; the people do not trust their own State government to undertake a practice of silviculture that is within the realm of economic practicability; the state can afford to hold the timber untouched. The answer is obvious, to hold the timber intact until conditions warrant a different policy. In short, the people of New York State wish a State Forest Park, to be handled in the interest of scenic development and use alone, just as the National Parks.

Many foresters are even today arguing that this is uneconomic. I have contended that the State of New York handle the Adirondack Preserve on this Park principle, at least at present. It is not a question of economics pure and simple; it is a question of what the majority of the people want and are willing to pay for. I predict that the time will come when the people will wish to use some of the timber, when economic conditions will permit a better silviculture, when there will be confidence in public officials of the State, and when the Adirondack Preserve will be handled like the Forest de Fontainebleau and the Foret d'Orleans in France. This time will come because all conditions as well as the wish of the people will warrant and demand it. Today they do not.

The National Park situation is in a way similar, in a way different. It is similar in that the people want certain areas devoted wholly to recreation use and development. It is different in that most of the Parks do not contain, relatively speaking, natural resources of very great commercial importance. Unless an unwise policy of Park extension is adopted, there will not be the same relative need for injecting economic development in the Park management as in an area like the Adirondacks. The Nation is so great and so rich that it can afford to forego income from the Park areas, to forego the gains from the industrial development of their resources, and can devote moneys to scenic development. Let us, therefore, leave out of consideration the idea of any commercial development of Park resources, aside from the recreation resources. No area should be a National Park that must be commercialized. I am opposed to any action to commercialize timber, grazing, or other resources in the Parks.

There is general agreement that no area should be set aside as a National Park that does not contain scenic features of supreme beauty and grandeur, or of exceptional natural interest. Public statements by the Secretaries of Agriculture and Interior and by the many friends of National Parks emphasize this point. But the principle is so broad, and we have so many areas that are beautiful, majestic, and interesting that the mere statement of the principle is not conslusive as applied to single areas taken by themselves. A few areas do stand out so conspicuously as world-wonders that no one has a question about the desirability of making them National Parks. As to the others mere grandeur and beauty do not in themselves constitute a reason for the creation of a Park. While no area should be made a Park that does not have exceptional scenic features, every area of great beauty is not necessarily qualified for a Park. In short, a sound Park policy must give consideration to certain broader factors.

First of all, there is the principle of concentration of public funds for development. Mere segregation for protection does not suffice for a Park. Protection is just as effective under a National Forest administration. The area should be so important as to justify very liberal expenditures by the whole Nation for roads and other development, such a development as is impossible by the Forest Service in view of its relative obligations elsewhere. Here, then, is an economic factor, for the Nation must necessarily impose some limitation to the special areas which it will segregate for such purposes. The very nature of the National Park plan involves selection and limitation.

The development of most of the recreation areas of the public properties will be in connection with or side by side with the development of other resources as parts of National Forests. We are going to secure greater support, I believe, in road building than heretofore. Just as soon as we get larger funds our very results will solve the recreation question in most places. But there are some areas that cannot be taken care of by our program, even if it were multiplied tenfold. These are enterprises that are so costly, and at the same time are so important, that they should stand alone and be considered as unique by Congress. These areas should be National Parks.

Purely from the standpoint of National Parks themselves these principles are essential in considering new areas. A multiplication of Parks means lowering standards and depreciating the value of all. It means that available appropriations will be spread thin and the Parks remain undeveloped, less than if they had remained as National Forests. It means pressure for commercialization of some, and hence danger to all. It means inevitable duplication with the National Forests that is unnecessary, uneconomic, and confusing to the public.

I have been endeavoring to approach the Park problem from an affirmative standpoint. Carried out in that spirit we will reach results that obviate difficulties feared by many who have been approaching the problem as to what should not be done. Thus, I believe that we should do everything in our power to aid existing Parks. I regard the Yellowstone Park as the greatest single factor in that region. All roads lead to the Yellowstone, literally as well as figuratively. We are building highways to the Yellowstone Park, we are adapting our administration of nearby Forests to insure the welfare of the game that centers there. We have approved an addition to the Park. This last action was not so much because the area is unique in beauty or grandeur, but because the area will add materially to the features of an existing splendid Park and may best be developed with it. Congress is concentrating on the region with road money. The added area will be opened up and used through such appropriations. The Yellowstone will be a better Park and more serviceable to the Nation by the addition. I would apply the same principle to the proposed addition to the Crater Park. It is in such a case not a question of measuring values of scenery, as in considering a new Park. We have a Park, recognized by Congress. Let us help its development. If a small addition, which is not needed for other development, is logical and will really aid in making the Park of greater public service, that addition is proper.

What of a case like the Mount Evans area near Denver? This is a splendid illustration of a critical area. The final action in this case will be very important in determining whether we adopt a sound or an unsound policy of National Parks. Mt. Evans is in itself very beautiful. Those who tramp over it are certain that it rivals the best scenery of the world. It does not, however, stand out as unique, like the Yellowstone, Grand Canyon, and Mt. Ranier. In fact, in Colorado alone there are numerous areas that I am told are of wonderful grandeur and should be made into Parks. The question of whether it should be made a Park cannot be determined by a mere certification that it is beautiful. Action on that ground alone would set a precedent for twenty other Park proposals, many of them fully as worthy. The proposition must be considered in connection with other areas and within the limits of a practical Park program. Shall the nation pick out Mt. Evans, taking into consideration its scenic beauty, its accessibility to probable visitors, and all other factors, and say that the Federal government will spend nearly a million dollars on a great mountain boulevard, and make this one of the areas that the whole Nation will develop along with its best scenic attractions, like the Grand Canyon and the Yosemite? Other areas like Pike's Peak, Grand Mesa, the head of the Rio Grande, the Curay region, in Colorado, and numerous proposed areas elsewhere, shall not be made into Parks, but only Mt. Evans. If after mature consideration by the Departments in connection with a definite program, Mt. Evans were selected for such large federal development, we would be proceeding on a sound basis, for the decision would mean a definite limitation of

Park extension and the creation of Parks by far-sighted planning, not by expediency. In short, the answer to the Mt. Evans puzzle is to have a real program, rightly worked out; then stick to it.

Still another problem is facing District 5, and that is the proposed Sequoia extension. We have here to deal with something very different from an extension like the Yellowstone and Crater additions. I view it like a proposal to create a new Park. My own impression has always been that it is perfectly logical to include in the Park system the highest mountain in the country, especially as the surrounding country is described to me by many visitors as of exceptional interest. It is quite possible that there are other portions of this region that are of a character well within the class of the Yosemite and Mt. Ranier. As to what should be included in the New Park, is another question. I would say, therefore, that Mt. Whitney and perhaps some other features are so preeminent that we should select them for special development and large expenditures of federal moneys. But do not include great natural resources that should be used commercially.

The foregoing all points to one great and fundamental principle, that there must be a more concrete policy and that this must be applied in the form of a far-sighted program. There are, as indicated, certain broad principles recognized but no definite policy, and no attempt has been made by the two Departments to agree upon a program. The latter requires first of all mutual confidence, a joint effort for a common end, and full consideration of the problems of both Forests and Parks. There must follow a joint field study. This necessarily will take some time, for it must be deliberate and in the nature of a real study, not a hasty trip to a few points.

Meantime there is a movement backed by quite a public sentiment for a very large Park program, for a chain of Parks connected by Park to Park highways. This movement has a basis of excellence, but is uneducated. There is one great flaw in it as at present promoted, namely, the omission of the recreation features of the National Forests. It is not sound policy to develop chains of Parks, leaving out of consideration the beautiful points in the Forests. It is equally unsound to advertise chains of recreation points in the Forests, leaving out reference to the intervening Parks. In short, the movement for an extensive "recreation" development should be a program that includes every Park, and every fine feature of the Forests. The two Departments should join in their recreation maps and advertising, and thus make a joint plan that all could support. We are all working for the Nation, and we must be big enough to secure the confidence of the Nation. This is the way the matter must be handled ultimately; why not now?

But there are also local movements backed by great pressure and propaganda for specific Parks. Usually these are started by some one community or a small group of men. They are nearly all cases based on a desire to secure the advertising that goes with the classification of a local area as of national importance from a scenic standpoint; and in the belief that there will be large appropriations for scenic highways. They are based on a false premise, for unless the number of Parks is limited the name will lose its magic, and in most cases there is a greater prospect of roads in the National Forests than in all but the most distinguished Parks. Nevertheless these movements are embarrassing, oftentimes accompanied by attacks on the Forest Service and on individuals under the allegation that we are moved only by desire to retain jurisdiction over the land. We may have to expect such attacks pending the development of a concrete policy and program, as outlined above, and pending a larger road program than we now have. If our own vision is broad and clear, and our action wise, we may be confident that the results will be in the largest public interest, and that is what we seek.

In several instances we have been particularly embarrassed because the Department of the Interior has announced its backing of certain Parks without the kind of joint study I have outlined. I think that we will be able to work out these special cases to a wise conclusion. It is my earnest hope, backed by every effort, to bring about such joint consideration of other cases, in conjunction with a real program, that we will not again find ourselves facing such an embarrassment.

H. S. GRAVES.

More of the 20th Engineers Ordered Home

Among the organizations designated for early return to this country are the following units of the 20th Engineers: Headquarters 1st Battalion, 4 officers, 26 men; Medical Detachment, 2 officers, 26 men; 1st Company, 5 officers, 242 men; 2nd Company, 2 officers, 121 men; 3rd Company, 3 officers, 240 men; 36th Company, 1 officer, 92 men; 30th Company, 5 officers, 232 men.

Hearings on the Appropriation Bill

The prospects of an early readjustment of statutory salaries in the Forest Service are not good. Colonel Graves, with the approval of Secretary Houston, presented an exhaustive report to the Committee in charge of the appropriation bill for the Department of Agriculture setting forth the need of salary readjustments, and made strong recommendations for its immediate consideration. However, the Committee indicated that it would not concern itself with this phase of the bill and accordingly the statutory roll will not be changed at this time. This stand was taken by the Committee not because of any feeling that the recommended adjustments are unwarranted but because the entire question of salary reclassification and readjustment is to be taken up by a special committee to be appointed by Congress.

Congress appears to be disposed to continue the $120 bonus; and provision for this is made in the Legislative, Executive, and Judicial Bill, already reported to the House.

Provision for the reclassification of salaries is made by the following:

"That a joint commission is created to be known as the 'joint commission on reclassification of salaries,' which shall consist of five senators, who will be members of the Sixty-sixth Congress, to be appointed by the President of the Senate, and five representatives, who will be members of the Sixty-sixth Congress, to be appointed by the Speaker. * * * * * *

"It shall be the duty of the commission to investigate the rates of compensation paid to civilian employees by the municipal government and the various executive departments and other governmental establishments in the District of Columbia, except the Navy Yard and the Postal Service, and report by bill or otherwise, as soon as practicable, what reclassification and readjustment of compensation should be made so as to provide uniform and equitable pay for the same character of employment throughout the District of Columbia in the services enumerated."

The Committee seemed to view with favor the recommendations made by the Forester that $1,500 be made the maximum for buildings instead of the present limit of $650, and also seemed to favor a wording in the bill which will authorize Forest officers to make arrests without warrant for violations of game laws within game preserves under the same conditions as Forest officers make arrests on the National Forests and Parks.

Migratory Bird Law

The present migratory bird law was not an issue in the recent case dismissed by the Supreme Court of the United States on the Government's motion. This action had reference to a case that had come up from the Arkansas Federal District Court which had held the law unconstitutional. The law under which this action was brought has since been repealed by the enactment of a later migratory bird law. The motion to dismiss was merely to remove the old case from the records of the court and in no way has any bearing on actions that may be brought under the existing law.

Wood Preservers to Meet in St. Louis

The American Wood Preservers Association will hold its annual meeting at St. Louis, Mo., on January 28 and 29. In the call for the meeting mention is made of some of the problems confronting the Association which are to receive special consideration at this time.

Among the topics of special interest to the Forest Service is the establishment of uniform specifications and the centralized purchasing of crossties. This subject will be handled by John Foley, at one time a member of the Forest Service, afterwards forester for the Pennsylvania Railroad, and during the past year associate manager, Forest Products Section, U. S. Railroad Administration. Mr. Foley is to present a paper entitled, "Development of Uniform Practices in Procuring and Preserving Crossties."

Biological Literature in English

The need for scientific literature in English rather than in German was well brought out by a recent survey made in London. There has just been published the "International Catalogue of Scientific Literature," which under Section L of the index (general biology), shows that of 286 journals quoted from before the war 169 were German, 49 English, 25 Russian, 14 French, 10 Dutch, 8 Danish, 6 Hungarian, 3 Polish, and 2 Swedish. In the German list have been placed the 20 Austrian journals, which are essentially German, 5 printed in Switzerland and 2 in Poland. Of the 49 English journals, 36 are printed in the United States. The French journals are scattered; three are printed in Switzerland, two in Russia, and one in Poland.

This all goes to show how completely Germany had our scientific confidence. The question now arises, why not have this literature in the English language? The population of Germany was less than 67,000,000 before the war: Suppose that we consider the German-speaking people to be 100,000,000. We find that the United States of America alone has over 100,000,000 people. To this may be added the British Empire with about 438,000,000, which means that about five times as many people speak English as speak German.

Forest Service Lantern Slides

More than 16,000 lantern slides are embraced in the Forest Service lantern slide collection now available for general use, not alone by members of the Service but by any one interested in forestry education and publicity.

The Forest Service has been the pioneer in effective use of slides for publicity and educational purposes. The slides are made from the photographs taken by the field men of the Forest Service, the negatives of which are stored in Washington. Selection for slide purposes is based on the call for slides, and on the preparation in advance of special lecture sets on particular topics. These sets each contain about 50 slides, and each set is accompanied by a syllabus or "canned lecture" for the use of the lecturer, as a basis for his own version or as a prepared or "canned" description of the slides as shown on the screen. At present the slides are divided into the following sets:

Of general interest

Conservation of the forest
Forestry in the United States
The work of the Forest Service
The farm woodlot
Street trees
Tree windbreaks
Recreation on the National Forests

For special use in schools

Nature study and forestry
Botany and forestry
Manual training and forestry
Geography and forestry
Agriculture and forestry
Life of a tree

New sets are being built up constantly and every effort is made to replace slides in use by better ones whenever this is possible, and all field photographs are carefully scrutinized for this purpose.

These sets, packed ready for shipment, weigh about 12 pounds. During the active lecture season the itineraries are arranged to save transportation, and the slides are sent from one borrower to the next. Borrowers pay the transportation charges, and are held responsible for any slides broken or lost.

Slides from the general collection are also available for use under the same conditions, without any syllabus. Selections from the general collection may be had on the following subjects:

Forest types, individual species, forest reproduction, forest utilization, forest fires, erosion, water supply, game preservation, forest planting and plantations, lumbering, grazing and its effects, timber physics, road building in the National Forests, camps in the National Forests, wood preservation, and wood utilization.

Visual education has been accepted as the most satisfactory for school use, and is employed in every instance where the subject lends itself to such preservative use. Forestry and the work of the Forest Service without any question fall into this category.

The slides are available, and all that is necessary is for Forest officers to take advantage of opportunities to spread the gospel of forestry and in addition to let others, who are interested and willing to help, know of the facilities at hand.

Proposed Land Exchange Legislation

The acquisition of private lands in the Bitterroot, Missoula, and Lolo Forests in Montana or within two miles of the boundaries thereof, in exchange for either Government land or timber or assignable certificates for timber of equal value, is provided for by a bill recently introduced in Congress by Senator Myers. The assignable certificates are to be acceptable at their face value in payment for National Forest timber purchased in Montana in accordance with the regular timber sale provisions.

Washington Notes

Arthur W. Sampson is back in Washington for the winter.

The Red Cross drive for members for 1919 in the Washington office resulted in 156 memberships. Of this number 146 are annual, 9 subscribing, and 1 contributory.

A good start has been made in the New Year in getting old Forest Service publications from the field. Following are the contributions from the Forests: Colorado, 275; Santa Barbara, 12; Snoqualmie, 47; Holy Cross, 75; Durango, 505; Gallatin, 36; Harney, 6; San Isabel, 57; Weiser, 170.

R. L. Hensel, forest examiner in charge of the range experiments on the Santa Rita Reserve, has returned to Washington for a detail.

William R. Chapline, after several months' on special work in District 3, is back for a stay in Washington.

Summer Tour of National Parks and Forests

A two months' tour of the National Parks and Forests of the West is planned by members of the Massachusetts Forestry Association next summer.

It is estimated that not less than 100 members will make the trip. Tentative plans provide for leaving Boston June 26; Chicago, June 27; reaching Denver, June 29. From there a trip will be made to Pikes Peak and vicinity, and then on July 2 the party will leave Denver for the Yellowstone Park. Entrance to the Park will be via Gardiner, on July 4, and exit via Cody, on July 10. A stop will be made at the Glacier National Park so that Spokane will be reached on July 18.

Seattle will be reached July 19 and from there a trip will be made on Puget Sound to Tacoma and three days spent in the trip to Mt. Rainier. The trip to Portland will be made on July 24, and after two days here, continued to Crater Lake for a stop, and then continued to San Francisco where the party is due to arrive on August 1.

From San Francisco the members go to the Yosemite, where they will stay until August 9, and then continue to Los Angeles. On August 13 and 14, a run will be made to San Diego; on August 15 to Riverside, and then eastward to the Grand Canyon, where August 17 and 18 will be spent. From that point the homeward trip will be made without any stops. The schedule provides for arrival at Boston on August 22.

District 1

With deep regret announcement is made of the death of Errol D. Crittenden, 312th Engineers, A. E. F., in France, some time last October. Mr. Crittenden was scaler on the St. Joe and Kaniksu Forests for about a year. He was drafted for military service last July.

Cordless switchboards have been installed on the Cabinet and Pend Oreille Forests by R. B. Adams, telephone engineer for the District. These switchboards are wired in accordance with a special circuit devised by Mr. Adams, and excellent service is obtained. It is planned to install additional boards of this kind in other localities.

J. A. Larsen, who for some time has been making a study of methods of cutting in white pine, recently took 13 samples of duff from areas each containing 2 square feet, from which he sifted out and counted the seed. With these counts as a basis, the following figures show the amount per acre:

White pine	192,635	Cedar	1,892,000
Douglas fir	5,027	White fir	62,842
Larch	28,807	Spruce	1,676
Hemlock	5,027		

The experiment was carried on on the Bryant Creek sale area in the Kaniksu Forest, which produced 50 M feet per acre. It is a 150-year-old B 1 white pine stand merging into B 2 in places.

District 2

A new Individual Reading Course, supplementary to the present study course, is to be inaugurated in the District at an early date. Under the proposed plan clubs will be formed to secure books on subjects of interest to Forest Officers; each book thus obtained will be reviewed in the District Office, and a set of questions dealing with special points to be studied sent out, as a help to field and office men.

The amount of effort put into this course will be optional with the men concerned. They may either simply read the books or study them carefully to be able to answer the questions. Officers interested in special subjects will be invited to write in for additional literature, which will be obtained for them through a review of publications in libraries and bookstores.

The first set of books to be reviewed and distributed for reading will consist of five volumes on Efficiency, Social Psychology, and Rural Life Problems. Forest Examiner Keplinger has been detailed to the District Office to take over the supervision of these courses.

From 30 to 75 per cent of the yellow pine and Douglas fir seedlings planted by the Forest Service in cooperation with the City of Denver along the auto highway through the Denver Mountain Parks are thriving. The heaviest loss was in dry exposed situations on the north slopes of Lookout Mountain. Plans for the continuation of this work by the city are now being made. The planting stock is to be obtained from the Monument Nursery on the Pike Forest.

A timber sale covering 57,000 hewed railroad ties and 1½ million linear feet of mine timbers, props, and ties in the Camp District of the Colorado National Forest was recently awarded to Osea Nelson of Foxpark, Wyoming. Hewed ties brought 15 cents each and mine material 35 cents per hundred linear feet.

A shot-gun quarantine maintained by the authorities of Gunnison County has seriously delayed the awarding of a six million linear foot sale of mine props near Pitkin in the Gunnison National Forest. On account of the quarantine, prospective purchasers have been unable to examine the chance, as every one entering the county is obliged to remain in quarantine for five days before being allowed to travel through the country. The timber advertised under this sale will be used in the coal camps around Gunnison and in the southern part of the State.

Ross Philips of the Bighorn Forest has arrived in Denver to take charge temporarily of the District Engineer's office pending the appointment of a successor to District Engineer Robert E. Pratt.

Forest Examiner H. H. Richmond of the Minnesota Forest is on detail in the District office pending a transfer to the Arapaho. The wonderful mountain country of the Rockies will doubtless be a pleasing change from the sand plains and swamps of Minnesota.

Some time ago we mentioned the 25-mile trip made on foot by Messrs. Hatton, Blair, and H. H. French. At last we have been able to get word from the snowbound Forest ranger who sat impatiently on the chilly mountain top waiting for the visitors who failed to come. It appears that said ranger spent all of one perfectly good but stormy Sunday afternoon at a previously designated place along the trail to act as escort over the range. The ranger finally gave up in disgust and beat it for the nearest cow camp, a mere 25 miles away.

District 3

Brand books will be furnished free of charge to all Supervisors in New Mexico by the Cattle Sanitary Board. Cooperation between the Forest Service and the Board has been effective, and the action taken by the Board is to be understood as an expression of its satisfaction. It is planned to supply the brand books with all supplements issued to date and to furnish the monthly supplements as issued.

Grazing lands included within the limits of the land grant to the old Atlantic-Pacific Railroad Company, embracing a strip approximately 100 miles wide extending from Albuquerque to Kingman, are being examined by Grazing Examiner Hill and E. O. Wooten of the Office of Farm Management. This examination is undertaken to determine if possible the necessary measures to place the grazing industry in this region on a more satisfactory basis.

District 4

Not a shot has been heard in the vicinity of the Teton since the close of the hunting season. This is quite unusual, judging by reports of past seasons. It may be that the presence of nine Forest rangers who are accompanying the elk from the summer range to this range has something to do with it.

District 5

The date for the Supervisors' meeting has been advanced to January 20,1919, to avoid any interference on account of the close of the first semester and opening of the second. Announcement has been made of the outside speakers who will address the Supervisors. The program calls for the following:

Monday	University Farm - Its Aims and Accomplishments	H. E. Van Norman, Dean
Tuesday	Reconstruction Problems	Thos. F. Hunt, Dean and Director
Wednesday	Forage Plants and Nutritive Value	Prof. P. B. Kennedy
Thursday	Judging Beef Cattle and Sheep	Prof. G. H. True
Thursday	Cooperation	L. A. Hares, President Cal. Cattlemen's Asso.
Friday	Cooperation with Farm Bureau	Prof. B. H. Crocheron, Asso. Prof. Agricultural Extension
Saturday	Winter Feeds and Feeding	Prof. G. H. True, or colleague

Saturday	Relation of Valley Ranches to Range Land in California	Prof. G. H. True, or colleague
Monday	Places of Historical Interest in California's National Forests	Prof. H. E. Bolton
Tuesday	Methods of Increasing Available Range	Dr. C. H. Shattuck

Excepting L. A. Hares, the speakers listed are members of the faculty of the University of California.

A higher standard in brush piling and burning, or to put it in another way, a lower rate of mortality among seedlings as a result of brush-burning operations, is desirable. It is surprising how large a percentage of the stunted and apparently worthless seedlings, especially in our yellow pine type, recover fully within three years after the area has been logged. It is still more surprising to note the rapid and sturdy growth made by these seedlings within the succeeding few years.

These facts were brought out by studies of the conditions of cut-over areas made in Oregon and California and indicate the very real value of more care in brush-piling and burning operations. This portion of the operation needs to be watched, for it is as important, in its way, as is the marking.

Timber sale deposits aggregating approximately $55,000 are expected next field season in connection with the 233 million-foot sale made last spring to the Lassen Lumber & Box Co. This company started its operations on the Susan River watershed early last spring, and with its first mill - a circular affair with a capacity of 40 M per shift - cut out over $18,000 worth of Government stumpage in the season just passed. Foundations for a second mill, a single-band type with a 65 M feet capacity, were laid last June, but on account of war conditions it was not completed in time to contribute to the 1918 cut.

Both mills will be run for the coming season, and a monthly cut of 2,400 M for the season - April 1 to November 30 - is the company's present plan.

District 6

The Chesnimnus Cattle and Horse Association recently purchased twenty-one Hereford bulls, at a cost of $325 each. This Association grazes its stock on the Wallowa. Wallowa County cattlemen have brought their herds to a high standard and as a result of constant efforts to improve their range stock their beef commands top prices in the market.

The lady-bug mobilization is still in progress in Oregon and Washington. Already twenty-five million lady-bugs have been collected and stored, and seventy million more located. Forest rangers have been instrumental in locating many of these lady-bug caches on the National Forests of the District. The beetles will be used next season to combat the destructive work of aphids in the grain fields of Oregon and Washington, and will be distributed by County agents and State officials working in cooperation with the Bureau of Entomology.

H. S. Spray has settled a fire trespass on the Okanogan by the payment of $7.40, the cost of suppressing a fire which he permitted to escape from a brush-burning operation on his ranch.

Captain F. E. Ames writes that the chief issue for discussion among the boys of his Company is: When will we get home? His men are still turning out ties and are comfortably settled in winter quarters.

F. S. Wenner, a sheep man who uses range on the Chelan, has reimbursed the Government to the amount of $293.12 for the damage resulting from a fire, probably started from a cigarette discarded by one of his herders.

The 20-acre patch of tall larkspur which caused an annual loss of cattle amounting to $280 on the Siskiyou was grubbed out by the Forest Service and the stock growers using the range during the last field season, at a cost of $200. It is planned to grub out this season a similar patch on the Minam which has caused an annual loss of $427.

The Forest Service bowling league held a Christmas contest Monday night. The prizes ranged from a turkey to a crab, and were won by the following members of the league in the order named: Messrs. Holbrook, Kuenzel, Merritt, Loving, Johnson, Brundage, and Teed. It is planned to hold another contest next week.

The Polson Logging Company has settled a fire trespass on the Olympic amounting to $312.66. This fire was started from a donkey engine operated by the company. The spark arrester with which the donkey was equipped was defective, and the sparks started a fire on a mossy tree, from which it spread readily. A large force of soldier loggers got the fire under control, but not before considerable damage was done to the spruce, hemlock, and fir timber on an area of about 25 acres.

A cooperative agreement between Districts 5 and 6 and the Bureau of Entomology, for the joint study of methods of controlling insect depredations in timber and the relative efficacy of these methods, is in effect. During the past field season an insect control project was carried out on the Sequoia National Park and Sequoia National Forest in an infested sugar-pine-yellow pine stand under the joint surveillance of bureau representatives and Forest officers from Districts 5 and 6. The purpose of this project was to determine the results which follow the application of the percentage principle. Preliminary conclusions will be available within a year or two. In the meantime it is planned to initiate similar joint projects on the Pacific Coast, particularly in yellow pine timber on the National Forests.

Forest Examiner A. A. Griffin addressed the Portland Section of the Society of American Foresters on December 19, on "The Effect of Forest Cover on the Melting of Snow and Its Relation to Irrigation." Mr. Griffin's talk was based on data secured during two years of study, in which snow-depth measurements were taken weekly on selected areas on the Deschutes, Columbia, and Wenatchee Forests. The snow disappeared from the forested areas on an average of 17 days later than from the open areas. Mr. Munger spoke briefly on the relation between weather conditions and forest growth. He emphasized the importance of a knowledge of weather conditions in a solution of silvical problems. Logging Engineer Nelson, who has just returned from Madison, made an interesting report on his visit to the Laboratory, and mentioned some of the war problems that have been handled there.

Acquisition

H. G. Wood, National Forest Examiner, will use his tow-months' furlough to make a trip to Panama and the adjacent region to study tannin products.

Forest Examiner W. J. Damtoft is in Washington on detail.

A. R. Kinney, Examiner of Surveys, is now at Harrisonburg, Va., working up the survey descriptions and W. N. Sloane is at Asheville, N. C., on similar work. This work will continue for the remainder of the winter.

WEEKLY BULLETIN

Forest Service - Washington Office

(Not for publication)

January 20, 1919.

Forestry Troops Highly Commended

The following general order was issued on December 7th by Col. J. A. Woodruff, commanding the 20th Engineers (Forestry) in France:

To the Officers and Soldiers of the 20th Engineers and Attached Service Troops:

On November 25, 1917, the first board was cut in France by American forestry troops at a little French mill in the Jura mountains. At the same time another detachment was getting out 50-foot piling in the Landes on escort wagons drawn by hand. The total cut during December, 1917, was 321,000 board feet of lumber and 12,000 railroad ties.

When the armistice was signed on November 11, 1918, the 20th Engineers were operating eighty-one American sawmills and producing 2,000,000 feet of lumber and round products every working day. Up to December 1st we have cut a total of 272,500,000 feet of lumber, including 2,728,000 railroad ties, together with 38,000 pieces of piling, 2,739,000 poles of all sizes, and 892,000 steres of fuelwood.

Recent reports from the various depots and construction projects of the American E. F. show that the army was at the time of the concluding of armistice well supplied with lumber. When ties were called for in large quantities to support the advances of our troops at St. Mihiel and in the Argonne, they were ready. At practically every dock project deliveries of piling and lumber were well ahead of construction. In other words, the forestry troops have made good in the work for which they were brought to France. Notwithstanding the difficulties in obtaining equipment and transportation, notwithstanding the enormous increase in the size of the American E. F., and the work which it undertook over the original estimated, the army has been given the lumber which it needed, and the suspension of hostilities finds us with a substantial surplus which will be used for the restoration of France. This is an achievement in which every man in the forestry troops may well take pride, for every one of you have had a share in it. Your part in winning the war has been as important as that of any other troops in the American E. F. Your loyalty and enthusiasm have been put to a hard test. You wanted to get to the front, but could not. You have had to put in long hours of the hardest kind of work, month after month, without glory or excitement, and without the special forms of recognition given to combat troops. The medical officers have told us that the forestry troops were being worked too hard, but the only answer has been a steadily increasing cut of lumber from month to month. You have failed in no task that has been assigned to you. You have gotten more out of sawmills than had ever been dreamed of by mill operators at home. Time and again, in spite of difficulties such as lumbermen never contended with before, you have exceeded our expectations. Your record as members of the American E. F. will be a source of pride and satisfaction to you as you return to civil life. It will be your recompense for the sacrifice which many of you have made to come to France.

As commanding officer of the 20th Engineers, I thank you for the untiring and uncomplaining way in which you have done your work. I am glad to have been identified with such a body of American soldiers.

A copy of this order will be sent to every company and detachment of the 20th Engineers, and attached service troops, read to the troops, and posted on the company and detachment bulletin boards.

(Signed) J. A. Woodruff,
Colonel, Engineers.

Salary Prospects

A bonus of $240 for the next fiscal year is provided for employees receiving $2,500 or less, by action taken by the House of Representatives in connection with the bill making appropriation for the legislative, executive, and judicial expenses.

The bill now goes to the Senate for action.

An effort was made to increase the bonus to $360, but the effort did not avail. As it is the bonus doubles that of the current year.

Change in Convoy Order for the 20th Engineers

Under date of January 18 the War Department announced the suspension of convoy orders for the following units of the 20th Engineers:--Headquarters First Battalion, 1st Company, 2nd Company, 3rd Company, 15th Company, and 21st Company.

The Ford and Gill Mining Claims

The mining locations on the Angeles Forest known as the Ford and Gill claims have been declared invalid by the Commissioner in reaffirming the decision made by the Register and Receiver.

The Ford and Gill claims have been pending for about seven years. Mrs. H. Gill and F. H. Ford et al, located a number of claims in Arroyo Seco Canyon, of the Angeles Forest just above Pasadena, claiming the lands so located to be of value for their deposits of building stone.

Instead of getting busy to develop the alleged deposits of building stone, the locators were in constant controversy with a sanitarium which had developed a water supply by driving tunnels on the land prior to the location of the mining claims. The claims also embraced a number of areas occupied by summer home permittees under permit from the Forest Service. Gill and Ford also got into the business of renting cabin sites and charging picnic parties for temporary uses and also attempted to collect rental charges from the Forest Service permittees.

There was considerable delay in getting the matter up for a hearing. Last spring the Register and Receiver handed down a decision in which they said: * * * * "While we are of the opinion that there is no valuable stone or mineral in commercial quantities on the several placer claims, we deem that question herein to be of little concern to us in view of our findings that the placer locations were not made in good faith and for the benefit of the so-called co-locators, but were in accord with a scheme hatched by Mrs. Gill for her own use and benefit to acquire possession and control over a large area of land that returned a large revenue. The locations, being invalid from their inception, are without force and effect and are so regarded by us."

The Why Of It -

Once about every three months we receive in the field a stack of manual amendments. Just about that often some change in the Fiscal Regulations gives us a back-set and makes us start in over again. Changes in the filing scheme come just as sure but perhaps a little farther apart.

Now there doubtless is some good reason for making a change but "descending from a clear sky without a word of warning" as it often appears in the field, it is sometimes very difficult to see the reason why. Just when Forest Officers become intimate with certain instructions or regulations they often wonder why they have to turn around and meet themselves coming back. Or when some several hundred have got certain instructions in the Fiscal Regulations down pat and then have to begin their A.B.C's again they often wonder "why." Putting the per diem business on an hourly basis instead of a meal basis for instance.

Most stenographers, like housekeepers, love to move the furniture about occasionally to give the house a change in appearance, but I have yet to see one that enjoyed digging over the files making changes for a day or two every time a new filing scheme came out. It doesn't help things any when the other members of the force can't find what they want after the changes are made, or when the file clerk goes to closing files and finds the same class of correspondence covered by three or four different designations in that many years.

Now there must be some good reason for making these changes. Nevertheless, it is a common thing to hear some man remark "Some guy back there ran out of a job and didn't have anything else to do." Or "A chief of office took a field trip and let some fellow slip one over." Wouldn't it help the field force some in cheerfully accepting these apparently inconsequential changes if they were informed of the reason why? What's the matter with a short paragraph in the bulletin telling us about the necessity of a change when it is made?

W. E. HARRIS,
Shasta National Forest.

Editor's Note:--

All we can say at this time is to repeat the slogan of a well-known advertisement -- "There's a reason." Changes in the Manual, fiscal regulations, and filing scheme hurt the victims less than the instigators, to hear them tell it.

We find that it is always a cause for keen regret when such changes are handed on to the field officers, yet it has to be done. An effort will be made to keep in touch with the authors of the changes, and to convey to the man in the field the underlying causes making a change necessary.

The New Hunting Trespass Regulation

The information contained in the October 14 number of the "Weekly Bulletin" relative to the new Hunting Trespass Regulation is of especial interest to Forest Officers on the Medicine Bow since in the local court we recently lost a game violation case which undoubtedly would have resulted in a conviction if the case could have been handled under the new regulation.

On October 11 Rangers Williams and Henry were at Roper's ranch on Douglas Creek when Okey Wennerholm, a stockman of whose game violation proclivities we have had good reason to be suspicious for a long time, rode up with a fine large buck deer. Williams happened to know indirectly that this was Wennerholm's second deer this season, so jumped him about it, and Wennerholm practically admitted this to be the case. As our local game warden is in France we reported the matter to the Sheriff's office; and armed with a search warrant Deputy Sheriff Trabing and I went to Wennerholm's ranch where we found the fresh hide, four feet, and hood of a fawn deer, which Mrs. Wennerholm informed us belonged to a deer that her husband had recently killed. Wennerholm hired an attorney and fought the case which was tried in the Justice of the Peace court at Laramie on October 15, and the Albany County Prosecuting Attorney handled the case for the State. The evidence undoubtedly was sufficiently strong to warrant a conviction but the jury, composed of Laramie business men, after about five minutes deliberation returned a verdict of "Not Guilty." The men composing the jury ostensibly, and probably actually, are in favor of game protection, but, as in the majority of game violation as well as cattle rustling cases, were entirely too reluctant to convict in a concrete case. The foregoing emphasizes the need of extreme care in securing evidence where local sentiment is adverse to game prosecutions; and also points to the need for systematic educational work along game protective lines.

The transference of the prosecution of game violation cases from County to Government officials (as provided under the new regulation), will be an effective step in giving game animals the protection to which they are entitled. The next move in Wyoming should be to change the State law to provide that game in a man's possession is prima facie evidence that he killed it, unless he can prove otherwise--in other words, reduce the excessive burden of proof, now reposed on the State, to a practicable point.

EARL S. PEIRCE,
Medicine Bow.

(From the District 2 Bulletin for December, 1918).

Forest Service to Protect Spruce Cut-over Lands in the Northwest

Protection against fire in the spruce cuttings and along the rights-of-way on the areas in the Northwest where the work was done under General Disque is to be taken care of by the Forest Service.

The spruce corporation is anxious to close up its business and has asked the Forest Service to provide the protection against fire, to supervise the clean-up of the brush tops resulting from the logging, and to patrol the areas for the next two years.

The necessary money is to be deposited with the fiscal agent by the spruce corporation.

Forest Service Motion Pictures for Russia

Motion pictures sent to Russia by the Department of Agriculture include the films on the following Forest Service activities: Cattle and sheep raising on the National Forests; lumbering western yellow pine in the Southwest; lumbering lodgepole pine in the Arapaho Forest; National Forests as recreation grounds; watershed protection and tree planting on National Forests; and work of the Forest Products Laboratory.

Agricultural Exhibit in France

An educational agricultural exhibit will be sent to France for use in the occupational education of our soldiers remaining in Europe. This undertaking is in cooperation with the National War Work Council of the Young Men's Christian Association. It is planned to send four sets of exhibits, each set comprising about one carload of material. Each set will be accompanied by a representative of the Department. C. A. Lindstrom of the Forest Service will be in charge of one of the circuits.

Resolution by National Mohair Growers

The National Mohair Growers' Association at its annual convention held at Phoenix, Arizona, in connection with the consideration of the production of Angora goats for mohair and meat, passed the following resolution which is of special interest to members of the Forest Service:

RESOLVED, That the National Mohair Growers' Association extend thanks for the cooperation of the U. S. Forest Service and for the experiments that it has been conducting in the interest of the goat industry.

Australia Will Use Its Own Timber

The exigencies of the war made it necessary for Australia to rely on its own ingenuity to meet the demand for lumber. According to G. L. Beeby, Minister of Labor and Industry in New South Wales, this development of local supplies has been so successful that Australia will no longer be forced to rely on Douglas fir and other American lumber.

Mr. Beeby states: "Our great forests are in the interior of the country, and to reach them it was necessary to build railroads. Before the war we found it cheaper to bring timber from Oregon in sailing vessels than to cut it in our own forests and haul to the sea coast. I don't think our pine is quite as good as the Oregon product, but it will answer the purpose."

Forestry in the South

Florida is at last going to have a forestry association. Steps to this end were taken at the recent two days' session of southern foresters. A committee of five was appointed to begin at once the formation of a Florida forestry association, and to prepare and submit to the next legislature a bill providing for the appointment of a State forester and for other forest protective legislation.

According to J. E. Rhodes, secretary of the Southern Pine Association, timber in the South is disappearing so fast that within five years about 3,000 sawmills, representing a total output of 3 billion feet of lumber annually, will be out of business.

Game Protection in New Mexico

The Pine Cone, the official bulletin of the New Mexico Game Protective Association, in a recent issue contained the following:

"Price of Antelope Meat Rises Sharply.
Proves to Be Expensive Substitute for Regular Diet.

A free and independent citizen of the United States and New Mexico was riding a mule through the fastnesses of the Black Range. There is no objection to any one's riding a mule if he wants to, particularly in regions as remote as the Black Range. But this mule differed from most other mules in this wide world in one particular. In addition to carrying his master, he bore athwart the saddle horn TWO ANTELOPE - two antelope that had recently been alive, but were now stone dead. In the scabbard slung alongside the saddle was a gun. In the saddle was a man. The connection between the man, the gun, and the antelope was fairly apparent. Still the man was near home and he might have got away with his little economy program

IF

he hadn't met a Forest Ranger. He met Mr. Ranger close-up, head-on, right in the middle of the trail - the man, the gun, the mule, the two scrubby little antelope. There was no way to retreat, there wasn't a ghost of a show of an alibi. All the doughty antelope-slayer could do was to concoct the usual HARD-LUCK ANECDOTE: a wife and four babies, no meat in the house, out of work. OUT OF WORK! - when every employment agency in America was shouting for help. OUT OF WORK! - when labor was the scarcest commodity in the world - next to antelope meat.

This table delicacy cost our free and independent citizen the sum of $207.50 plus the costs of the case. Bacon is cheaper at 50 cents a pound and pinto beans still cheaper at 15 cents.

Q. E. D. Don't try to solve the food shortage with antelope meat. Don't try to earn your living by POACHING instead of WORKING. Work is hard, but is frequently less expensive. Antelope meat is doubtless palatable, but is not indispensable to human sustenance. One antelope in the bush is worth two in the hand - or on the saddle-horn."

Field Officers and Current Literature

The recent issuing of a monthly list of current literature giving periodicals on file in the Washington office, furnishes the information as to what is being published, but for the majority of the officers serves only to increase the desire to secure the benefit of this reading. How then are the men stationed in the backwoods towns without libraries going to keep up on current literature? It is manifestly impossible for them to buy the books or to secure the loan of them unless the Service becomes the loaner. Requesting the Washington office for a digest of any article or book does not fill the requirement, because each individual will desire too much. Can not the Forest Service initiate in the Districts a traveling library of such periodicals as are requested by field men after selection from the monthly list? It is not likely that many periodicals would need to be purchased each month, nor is it necessary that any one of them be purchased every month. The field men's requisitions would determine the magazines to be secured. The periodicals would of course be old when received, but without some similar plan field men, particularly those at supervisors' headquarters, can not keep up with current literature.

H. C. HILTON.

Wood Supplies in the Central West

Supervisor Hilton, whose work on the wood fuel campaign was cut short by the armistice, states that in his travels through Minnesota, Wisconsin, and Michigan he found that there had been an increase in wood fuel production over that of the previous year.

Mr. Hilton found that large supplies of wood had been cut for the general trade, for local demands in the small towns, and for use on the farms. Cutting of wood was to be seen generally during December, and there seemed to be large supplies on hand in the city wood yards. The wood market is reported to be very poor at present on account of the abundance of soft coal and the removal of all restrictions that had been imposed by the Fuel Administration. This condition exists even in the small towns that could very well burn wood but have a very decided preference for coal.

Washington Notes

J. W. Stokes is now in Washington, and will shortly return to the Minidoka Forest. Mr. Stokes has recently been engaged on wood fuel work in Pennsylvania and reports that wood is being used for fuel more extensively this year than ever before. The coal shortage of 1917 and 1918 induced the people to lay in wood in addition to what coal they could get. The high prise of coal also caused many to turn to wood, and in the use of wood for fuel labor shortage and high wages were important factors. Four-foot wood cost from $4.50 to $7.00 per cord, and stove wood ranged from $6 to $30 per fuel cord.

J. H. Foster, who was on the wood fuel work in Maine, found it extremely difficult to work up any enthusiasm, as the Fuel Administration repeatedly asserted that there would be an abundance of coal. There was an abundance of soft coal, but a shortage in anthracite. More wood was available in case of need this year than a year ago.

Mr. Foster was forced to terminate his connection with the wood fuel work on account of the sudden death of Mrs. Foster.

Herbert A. Smith has left for a month's trip to Districts 2, 3, 4, and 5 in the interest of the work of the Editor's Office. Mr. Smith expects to reach District 5 in time for the last few days of the Supervisors' meeting at Davis.

E. N. Munns has returned to District 5 after spending a year in the East on special war work in the Office of Industrial Investigations.

During the month of December 786 books and periodicals were drawn from the Forest Service library and 109 members of the Service and others consulted the library personally. One hundred and eighty seven books and periodical articles were indexed.

W. Hoyt Webber is on a three-months furlough, and is now in California.

The State of Pennsylvania has offered to furnish the French government 100 pounds of eastern white pine and 50 pounds of Douglas fir seed. This is in addition to the 2,500,000 seedlings of eastern white pine previously offered. Just how the seedlings will be got into France remains to be solved, for France has very stringent quarantine regulations against the importation of plants.

Officials of the Museum at Bergen, Norway, are very anxious to get hold of various kinds of tree seeds for experimental use. Several years ago Anton Smitt, the forester of the museum, while in the United States made arrangements in Canada and in District 6 to get some tree seed.

On account of the war it has been impossible to have the seed shipped, and in a recent letter Oscar Hagen of the Museum indicated that if no other way was open to get the seed across he would have Anton Smitt return to this country to get it. About 75 pounds of seed are involved.

A. F. Hawes returns to the Forest Service February 1, upon the termination of the wood fuel work of the Fuel Administration. Mr. Hawes will resume his duties as extension specialist in cooperation with the States Relation Service for the northern and western United States.

Captain Cook, former supervisor of the Routt Forest, is on his way to Denver. In telling of how the war ended for him he recently wrote to a friend in the Washington office:

"We turned off the water and put out the headquarters cat at Camp Leach on January 4. The Colonel rode on the front seat of the car and I on the rear, so I had the honor of being actually the last soldier to leave the Camp, which is to be abandoned. The Colonel dropped off at the Army and Navy Club, and the car left me at the Union Station."

Captain Cook after several months' duty in France, where he reached the front lines with his regiment (the [illegible]03rd Engineers), was returned in August, 1918, to this side for duty in organizing new bodies of troops. Caught here by the armistice, Captain Cook was sent to Camp Leach, where he has been post adjutant.

District 1

There are possibilities that a pulp and paper plant will soon be established in the Flathead region. Recently representatives of the Glacier Pulp and Paper Company have visited the District Office and indicated the plans that are under way.

Lumberman John S. Baird is back in the Forest Service and has been assigned to the Kootenai Forest.

Philip Neff has been appointed lumberman on the Coeur d'Alene, succeeding C. A. Dahlgren, who has gone to Denver.

Emery E. Wilson, Deputy Forest Supervisor on the Clearwater, has resigned from the Forest Service.

Francis W. Harrigan has returned to duty on the Missoula, having been mustered out from the military service. Mr. Harrigan was stationed at Camp Lewis.

Dr. James R. Weir plans to make a study of the effect of lightning on tree growth and the rate of decay of forest debris.

In a lease covering about 15 sections of land within and adjacent to the Bitterroot Forest to the Bitterroot Stock Farm, by the Northern Pacific Railway Co., the following provision was inserted: "Provided that all established stock driveways shall remain open to Forest permittees for the purpose intended, and all established trails shall be open to the public."

The purchase of a small portable sawmill with a capacity of 1,000 or 2,000 feet b. m. is under consideration. It has been a matter of a good deal of difficulty to meet the needs for lumber of out-of-the-way ranger stations and other improvements. The mill that is being considered weighs about 1,200 pounds, is transportable by wagon or pack horses, and is easily set up and operated by two men. The plan would be to move the mill from place to place on previously prepared schedule. The local men are to cut and skid the logs in advance.

District 2

Assistant District Forester Morrell is now making his annual round of the Forest headquarters in District 2 to take up the allotment estimates and incidentally to discuss other matters of importance.

Forest Examiner Keplinger of the Holy Cross Forest has been assigned to the District office and is now engaged on educational work. A reading course, primarily designed for the supervisors, and a study course on the Manual are now under way. The first set of examination questions on the Manual study will be issued very shortly.

Forest Supervisor Upson of the Sopris and Forest Examiner Tinker from the Black Hills have reported for temporary details in the District office.

Word has recently reached the District office of the death of Roy S. Wheeler, who until about a year ago was Forest Examiner in this District. Mr. Wheeler was a victim of the "flu."

Free use business and the sale of oak and jack pine cord wood on the Michigan Forest increased during the winter. Most of the activities have been in the region burned over last season, at which time a part of the Silver Creek Plantation was also destroyed. In this connection it was possible to clear up a part of the area within the plantation which had supported a stand of young jack pine, so that planting operations can now be undertaken. This would not otherwise have been attempted for some years to come, because of the large amount of refuse on the ground as a result of the fires killing most of the young timber. Most of the wood cut is used on the neighboring farms. A limited amount was sold in the nearby towns. All of the timber killed will not be removed this year, as the demand is limited.

District 3

The location survey of the Apache Camp - Soldier Camp road has been completed. Field work was interfered with by heavy snowfall in the Catalina Mountains. Plans and estimates will be worked up during the winter, so that construction work may be begun in the spring as soon as weather conditions will permit.

Ranger Pigott contributes the following:

A permittee on the Coronado found the marked ears of his hog where it had been butchered. A search warrant was requested of and granted by the local justice of the peace, although the first place named for search was his own house, where a dressed carcass to which the marked ears fitted exactly was found. The justice paid for the hog and then tried himself and accomplice. A suspended fine of $50 each pending good behavior for six months was imposed by the justice on himself and his accomplice.

That eagles attack game is vouched for by a hunter on the Sitgreaves, who states he saw a flock of eagles taking turns diving at and scratching a bunch of three deer. One of the deer, a four-pointed buck, with scratches about the head and withers, was killed by the hunter. The seriousness of the injuries inflicted by the eagles was not reported. Supervisor Hoyt reports the incident as related to him.

Messrs. Barker and Shepard, while at a small lake on the Jicarilla Division of the Carson, observed an eagle dive from a considerable altitude to attack a small flock of ducks feeding on the lake. The ducks swiftly scattered, and the eagle, when a few feet above the water, executed a maneuver worthy of an ace; he reversed himself and shot practically straight upward, at high speed, with little observable motion of the wings.

Elk lodges in Arizona are proposing the creation of an elk refuge on the north end of the Tonto and the southwestern portion of the Sitgreaves.

Grazing Inspector Paul H. Roberts is back on the job after several months in the cavalry officers' training camp at Leon Springs, Texas.

Forest Supervisor Hugh G. Calkins has returned to duty after an absence of more than a year in the army. Lieutenant Calkins will be assigned to some special project work in the District office for the present.

District 4

There are still many persons who take a pessimistic view of the wisdom of Government regulation of our Forests, and Forest officers are too frequently called upon to show what is being accomplished by Government management and why such management is really necessary. Explanations of theories do not, in the majority of cases, satisfy the pessimist (who, by the way, has a tongue and some influence), but he must be shown actual benefits. He is not reconciled by something that has been accomplished somewhere else; it must be accomplished in his own State or community.

With the view of overcoming, as much as possible, this undesirable and detrimental influence, I have kept on the alert for any new convincing evidence showing the real value and benefits of Government management of our Forests, and have checked out some facts pertaining to the stock industry in Beaver Valley which show very decided results in favor of Government management. Inasmuch as all Forest officers are (or at least should be) working hand-in-hand to place our Forest resources on a permanent and stable basis and convince the public of such necessity and overcome adverse opinion, I take the liberty of passing along a few observations.

According to fairly accurate figures, during 1918 approximately 75 per cent of the range cattle owned in Beaver Valley were ranged during the summer season on public domain; the other 25 per cent were ranged on the Forest. During the beef sales at Beaver this fall, I made close observations to determine the ratio between the Forest-fed beef and that of the public domain, and, although the result is not gratifying from an economic point of view, yet it is from a forest conservation point of view.

The 75 per cent summered on public domain furnished 20 per cent of the beef, while 25 per cent summered on Forest range furnished 80 per cent of the beef. The significance of this comparison is better appreciated when it is realized that the public range referred to was for many years given preference over the range now included within the Forest.

Contributed by George P. Law, Forest Ranger.

District 5

The Supervisors' Meeting, scheduled to begin on January 20, has been indefinitely postponed on account of the influenza.

Now we know the war is over. Colonel DuBois is back, Fowler is back, and Wynne and Coffman will soon be here.

Here are some of the things Colonel DuBois had to say to his Supervisors on changing his khaki to the foresters' green:

"I'm back on the job. I shall see you all at the Supervisors' meeting at Davis and tell you all how glad I am to be with you again. I'll try to tell you something of what I have seen and learned in a year and a half in the military service and a year in France.

"What difference is my coming back going to make to you - to the District? The biggest asset I bring back is freshness in point of view . . . .

"I am returning to a group of old friends and fellow workers of eleven years or more standing - but they are not paying me my salary. The public is. The real question is what difference will my coming back make to the public - or, how can I make my return of the most value to the public? I think . . . . . . by taking what newness of vision I've acquired . . . . . out where it can get a look at the complex social organization to which the timbered hills where we work are supposed to contribute. If I can ever understand that organization I may be able to see more clearly how the timbered hills should serve it. And if I can see that I may be able to direct your work to better advantage."

District 6

"Moving" has been the chief topic in the Portland office for some time. The army of occupation has taken possession of the new quarters in the Post Office building. The old District offices have been located in the Beck Building for the last ten years. Accumulations during this period were drawn forth, tagged, boxed, crated, and numbered to land them in the proper rooms in the new Post Office building.

Deputy Supervisor H. D. Foster has been transferred from the Crater to the District Office and placed in charge of Maps and Surveys, in the office of the District Engineer.

A small crew in charge of Engineer Beezley, of the Office of Public Roads, has completed the relocation of the portion of the Rogue River Trail between Kelsey Creek and Mule Creek, on the Siskiyou. Five thousand dollars of 10 per cent money and two thousand dollars of county money are available for constructing this piece of trail.

Ranger Kirkpatrick, of the Rainier, reports a four-foot grand fir tree on the Cispus watershed which was fired on July 27 and was still burning merrily on November 8. The fire survived the heavy rains of September and October. Ranger Kirkpatrick explains that fire of this sort persists on account of clinkers which form and lie in the lowest part of the burning surface. The clinkers are red-hot bricks similar to those found in the bottom of a blacksmith's forge, and it takes a tremendous amount of rainfall to cool them off.

Forest Examiner Hanzlik, who is teaching forestry in the Department of Soldiers' Civil Reestablishment, University of British Columbia, at Vancouver, Canada, writes that "in the short forestry course for the returned Canadian soldiers I have now 23 men, and from indications the majority of these will be well suited for permanent ranger positions in the Dominion and Provincial Forestry Branches in Canada. The greater part of these men have had a season's work or two as temporary employees in these branches."

Ranger William Will has been transferred from Medicine Bow (Colorado) to the Columbia. At present Mr. Will is in the Supervisor's Office, and will be stationed at the Wind River Nursery.

Ranger Lenzie of the Wenatchee is in the District Grazing office for a short detail.

WEEKLY BULLETIN

Forest Service - Washington Office

(Not for publication)

January 27, 1919.

Returning Units of the 20th Engineers

The battleship New Jersey sailed from Brest January 15 and is due at Newport News January 27. The following organizations of the 11th Battalion, 20th Engineers (which was formerly the 1st Battalion of the 10th) are aboard the New Jersey: Headquarters, Medical Detachment, detachment 32nd Company, 33rd Company, and 34th Company,--12 officers, 613 men, who will be sent to the following camps: Fort Slocum, 2 officers, 87 men; Columbus Barracks, 53 men; Camp Lewis, 1 officer, 31 men; Fort McDowell, Calif., 32 men; Fort Duchesne, Utah, 34 men; Jefferson Barracks, St. Louis, Mo., 1 officer, 148 men; Fort Douglas, Utah, 25 men; Fort Bliss, El Paso, Texas, 32 men; Vancouver Barracks, Wash., 25 men; Camp Meade, 6 officers, 146 men.

Resolutions on the Death of Theodore Roosevelt

Theodore Roosevelt was an Honorary Member of the Society of American Foresters. The following resolution was adopted as an expression of the esteem in which he was held by the members of the Society:

"In the death of Theodore Roosevelt, the Society of American Foresters mourns the loss of its greatest, most brilliant, and most effective leader. The early growth of the profession of forestry in the United States was intimately bound up with his statesmanship while President. As a leader of the conservation movement he brought forcibly home to the American people the need of wise use and protection of the natural resources of this country. The crystallization of the conservation policy and the realization in large measure of forest conservation was one of the greatest achievements of his administration, and of profound significance in our progress toward national efficiency.

As a lover of nature and the out-of-doors, he was keenly interested in the forests, mountains, streams, and wild life. As a traveler and explorer he expanded our knowledge of the forests of remote regions both in Africa and in South America. By his proclamation 148,000,000 acres of National Forests were set aside--an amount three times the total proclaimed by all other Presidents since 1891, when the making of National Forest reservations began. It was in his administration and largely because of his advocacy that a true National Forest policy was made possible by the transfer of the National Forests from the Department of the Interior to the Department of Agriculture, in order that these Forests might be placed under technical supervision. He realized the need of technical foresters in this country for the realization of this National Forest policy, and therefore actively furthered forest education. He became an honorary member of the Society of American Foresters and, while President of the United States, addressed the Society upon the ideals and duties of American foresters. This address still remains to its members an inspiration of high purpose and of public service. As long as these ideals remain the guiding principle of the profession, the Society will remain in the forefront of progressive thought and action in this country."

Roosevelt National Park

Senator Phelan's bill for the establishment of the Roosevelt National Park is having smooth sailing. The bill was originally known as the Greater Sequoia National Park bill, but with the death of Theodore Roosevelt the sponsors made the change in name.

The proposed legislation aims to extend the boundaries of the present Sequoia National Park. This is done at the expense of the Sequoia National Forest to the extent of about 800,000 acres

Agricultural Appropriation Bill

The bill making appropriations for the Department of Agriculture for the fiscal year ending June 30, 1920, was introduced in the House on January 24.

A total of $31,691,562 is carried by the bill as introduced. Of this amount $5,966,869 covers the estimate for the Forest Service.

The bill provides in addition to the regular items for administrative needs, salaries, and expenses, the following items which may be of special interest. These items are all subject to the vicissitudes of action in the House and Senate and later by the conferees. The following are some of these special items:

A maximum cost of $800 for any one building--an increase of $150 over the present limitation;

For fighting and preventing forest fires and other unforeseen emergencies, $150,000;

For experiments and investigations of range conditions within National Forests or elsewhere in the public range, and of methods for improving the range by reseeding, regulation of grazing, and other means, $35,000;

Authority is given to acquire by purchase at not to exceed $200 the land now used as a forest nursery site for the Michigan Forest;

For the construction and maintenance of roads, trails, bridges, fire lines, cabins, fences, and other improvements, $450,000. Of this, not to exceed $50,000 may be expended for the construction and maintenance of boundary and range division fences, counting corrals, stock driveways and bridges, the development of stock watering places, and the eradication of poisonous plants.

For cooperation with the States in the protection from fire of the forested watersheds of navigable streams under the provisions of Section 2 of the Act of March 1, 1911, $100,000.

Road Funds

Senator Walsh has submitted an amendment to the bill making appropriation for post offices and post roads which provides an appropriation for roads within or partly within the National Forests. Provision is made for $3,000,000 for the fiscal year ending June 30, 1919; $6,000,000 for the fiscal year 1920, and $6,000,000 for the fiscal year 1921.

Senator Walsh is greatly interested in the road question. He was the sponsor for the $10,000,000 provided for under Section 8 of the present post roads law.

The Grand Canyon National Park

The bill creating the Grand Canyon National Park has now been passed by both Houses of Congress and goes to the President for signature. There is every reason to believe that it will be approved.

The boundary lines are drawn so as to restrict the Monument to the rim of the Canyon as far as this is possible without making an impracticable boundary. By this legislation the Kaibab and Tusayan Forests lose considerable area.

National Forest Receipts

Receipts for the first six months of the current fiscal year fall short of the receipts for a similar period of the previous year by $174,579.23. Total receipts to date for the current year are $911,825.63, as against $1,086,404.86 for last year.

Districts 3 and 7 alone show an increase; all the others fall behind.

The following will show the increase or decrease by Districts, compared with the first six months' period of last year:

District	Increase	Decrease
1	$ ..	$86,249.50
2	..	8,316.84
3	4,428.44	..
4	..	46,581.21
5	..	32,999.13
6	..	14,639.11
7	9,778.12	..

Paper Used in the United States

Fifty per cent of the paper in the world is used by the United States, although it has but five per cent of the population. The total amount is six million tons, or 120 pounds of paper for every man, woman, or child in the United States.

Silk from Wood Pulp

Approximately six million pairs of stockings of artificial silk made from wood pulp were exported during the past fiscal year.

The artificial silk is manufactured from cellulose produced from wood pulp through the action of chemicals. The cellulose is turned into threads by being pressed through minute openings in metal plates, and falling into a liquid which solidifies the thread. The textiles made from the artificial fiber are not fully equal to those produced from the natural silk, yet there is a growing use of artificial silk. In the last ten years the United States imported about 30 million dollars' worth in the form of yarns or threads. Prior to the war these were drawn chiefly from Great Britain, Germany, Belgium, and France.

Prospective Legislation

A bill has been introduced in the House to revest in the United States about 95,000 acres which were granted to the Southern Oregon Company for road purposes. The Government will reimburse the company to the amount of $250,000.

Protection of the water supply of the city of Olathe, Colorado, is provided by a bill passed by the House.

Gas Engines

How to run a gas engine and to avoid and remedy the more common forms of engine trouble is set forth in Farmers' Bulletin 1013, entitled "Practical Hints on Running a Gas Engine," just off the press. It will doubtless be of considerable value to Forest officers to study this bulletin. This applies not alone to those possessing automobiles or gas engines but to all, for with the increase in the recreational use of the Forests a ranger will have frequent calls for help from the stranded automobilists.

Is the American Eagle Predatory?

The American eagle is being accused of a decided partiality for young lambs, and the young of such game animals as deer, antelope, mountain sheep, and goats. In some quarters agitation has been started to list the eagle as an undesirable citizen and for immediate destruction. To prove the case or exonerate the eagle, evidence is necessary and it would be well for the men in the field to make and record any observations it is possible to make.

Office Hours in Washington

Beginning January 27, the office hours in Washington are again from 9:00 A.M. to 4:30 P.M., with one-half hour for lunch. For the past several months various departments in Washington have experimented in a change of the opening hour. This was done in an effort to cooperate with the street car companies which seemed unable to cope with the situation in Washington and get the Government employees to the offices on time.

Housing Conditions on the Snoqualmie

Snoqualmie Forest officers were very glad to note Mr. Waha's recent comments in the Weekly Bulletin on housing and living conditions of the Forest Service field force. On the Snoqualmie there is a very small resident population, so that it is necessary for us to employ many outside men during the fire season. We are thus forced to furnish these men with housing facilities or require them to rent quarters in small towns in which a good many of them are stationed. The short period of employment and relatively low wage, and constant shifting of men during their period of employment have made the latter plan generally impracticable, so we have been forced to furnish some sort of quarters.

During normal periods we have a very large number of applicants and are able to exercise considerable choice in our employees, which results in our obtaining men somewhat above the average. They appear to like Forest Service employment on account of the outdoor character of the work, because it is Government employment, and possibility of securing a permanent Government position. They are certainly not attracted to the work on account of high wages. We thus have an advantage over the average employer, but this again is discounted by the very poor housing and living conditions which men are required to accept. This is especially bad at the present time when the logger has gone ahead and provided his men with modern conveniences, and it makes a bad impression on the public for a Government Service to lag behind on a proposition of this kind when we should lead the procession. The quarters we have furnished men in the small towns on this Forest have been of a makeshift character and very unsatisfactory. We have used tents in two places, while in another small town, where we should have two or three men stationed permanently during the fire season, it was found impracticable even to [illegible] up a tent, so that the men stayed at a station 3½ miles out of town, which caused them to lose considerable time in traveling back and forth, and a big general loss in efficiency as the men were not where we usually wanted them when fire reports were turned in, and the time to make the trip into the headquarters railroad town would be lost.

At another place, where temporary tent equipment was used, we had a good permanent building located four miles outside of town, with the result that men spent as little time as possible at the small town and went to the Ranger Station because housing conditions were better, which made it more difficult for the Ranger to handle his force for patrol and fire fighting. These men did not disobey orders of the Ranger, but just drifted out to this station and stayed there because they liked it better than the makeshift quarters in town.

The necessity of improving conditions at these small towns has been felt on this Forest for a considerable time, and recommendations have periodically been made that some steps should be taken toward the acquisition of sites in small places which would enable the Service to erect some sort of permanent quarters for these men. In view of our condition, Mr. Waha's statement is, therefore, very welcome as far as we are concerned, for we have always felt that the small expense of providing better living quarters for our employees would be repaid many times in the higher class of men whom we could secure and in their increased efficiency.

LEWIS A. TREEN, JR.

Standard Paint Specifications

The need for standard paint specifications was shown recently, when District 2 solicited bids for paint. There was considerable difference of opinion among the various prospective bidders as to what constituted a good paint for Forest Service purposes. To settle the controversy the Bureau of Standards was called on for expert advice. This advice has now been received in the form of standard specifications and a few sample blocks painted with paints made in accordance with the specifications.

In the opinion of the Bureau of Standards ready mixed paints will be more satisfactory for Forest Service uses than paste paints, as comparatively small quantities are used at any one time. This decision is also on the assumption that the location in which these paints are exposed is very free from dust.

Bearing these points in mind it is believed that the white and tinted paints should contain only a small amount of zinc oxide. In cinnamon brown and green there is no need to use any of the expensive lead and zinc pigments. The white, cream, and Forest drab paint specifications are practically all of the same composition, with the exception of the tinting color in the cream and drab.

For Forest Service standard white paint the specifications are as follows: The paint should have a clear white color. It should dry within 18 hours to a full oil gloss. The pigment shall have the following composition: Zinc oxide not less than 15 per cent nor more than 25 per cent, boric carbonate white lead, not less than 25 per cent. The remainder may be either boric sulphate white lead or boric carbonate white lead. If desired, there may be substituted for a part of the lead either magnesium silicate, silica, barium sulphate, aluminum silicate, or calcium carbonate, or mixtures of these pigments in amounts not aggregating more than 15 per cent of the total pigment. In any event, the pigment portion of the paint shall contain not less than 85 per cent of lead and zinc pigments.

The vehicle shall consist of pure linseed oil, liquid drier, and volatile thinner, which may be either turpentine, volatile mineral spirits, or a mixture of these. The total volatile thinner, including that contained in the liquid drier, shall not exceed 15 per cent of the total vehicle.

The paint shall contain not less than 64 per cent by weight of pigment, and shall weigh not less than 15½ pounds per gallon. It must be satisfactory in every respect, including body, freedom from objectionable settling or caking in the can, working qualities, hiding power, drying, gloss, and durability.

The specifications for the other colors are prepared in the same manner, with the obvious changes due to difference in tint.

Madison Laboratory

More than one hundred men attended the second monthly meeting of the Forest Products Club held January 8 at "The Studio."

District Forester Paul G. Redington of Albuquerque, who is visiting the Laboratory, spoke on "The Organization of the National Forests." He brought out the interesting and varied activities of the Forest Service in the field, and paid a particular tribute to the loyalty of the men in National Forest work.

After the crowd had sung a number of original Laboratory songs, Director Carlile P. Winslow took up the subject of "Forest Service Research Organization" and reviewed briefly some of the experiences of the Laboratory during the past year's war work. The satisfactory feature of this work, according to Mr. Winslow, was the chance offered for the immediate application of the results of research.

Assistant Director O. M. Butler, speaking briefly on the "Relation of the Laboratory to the National Forests," expressed the hope for closer cooperation and suggested the advisability of having Laboratory representatives detailed to the National Forest Districts in order to keep in touch with Forest Products research possibilities.

Howard F. Weiss of the Burgess Laboratories, and formerly in charge of the Forest Products Laboratory, gave his impressions of the Laboratory as an outsider. He stated that he had recently seen lumberjacks and sawmill men in Idaho and Washington applying the knowledge gained from instructions sent to them as a result of Laboratory studies of airplane timber. He commented on the keenness of these men to use dependable information of this sort and insisted that the credit of it all was due to the Laboratory.

It is planned to continue these monthly meetings as a social and educational feature of the Laboratory work.

What appear to be world records for drying hardwoods have been established in the new kilns of the Forest Products Laboratory type built at the Rock Island Arsenal. During the past summer these kilns have been drying wood for the manufacture of small arms and artillery wheels. The ordinary commercial losses in kiln drying oak for wheel rims and spokes vary from 5 to 30 per cent and those in drying walnut for gunstocks run from 5 to 50 per cent. The Arsenal dried rims for the heaviest artillery wheels with a loss of only 2 per cent and walnut gunstocks with a loss of less than 1 per cent.

The operation of the Arsenal kilns was for a large part of the time under the supervision of Carl A. Kupfer, a member of the Laboratory force.

Washington Notes

Intra-and inter-Departmental basketball matches are planned by the War Camp Community Service. As a preliminary the basketball floor in Epiphany Church building has been reserved for the men employees of the Department three times a week.

A sociability automobile ride for members of the Forest Service in Washington has been suggested by several members who are the proud possessors of machines. In order to promote the get-together spirit, an all-day trip into the surrounding country has been mentioned. The important governing rule is to be that no automobile owner carry as passengers any persons who are not members of the Forest Service, except in the case of married men who will be allowed to be accompanied by their wives.

Two hundred and fifty pairs of woolen socks and forty sweaters were given to the shell-shocked soldiers at St. Elizabeth's Hospital, Washington, D. C., during the past week. The socks and sweaters were made by the ladies of the Forest Service throughout the country and were originally destined for the 20th Engineers in France. With the falling off of the need abroad the committee in charge of the Lumbermen's Fund for wool approve distribution in this country to men in the Army or Navy still in need of the warm clothing.

At the request of the Ordnance Bureau, F. S. Baker and W. D. Brush will continue with the Bureau for a few months more. Messrs. Baker and Brush will check up the amount of black walnut timber left on the hands of the various manufacturers holding Government contracts. The work involves the scaling of timber in the yards, at the railroad sidings, and in the woods. In some instances it will call for the estimating of standing timber as well. Under instructions an effort is to be made to release the contractors, if possible, from the completion of contracts involving timber still standing. Mr. Brush will work the Cincinnati territory and Mr. Baker that of St. Louis and Kansas City.

Associate Forester Potter has returned from Denver where he attended the meeting of the American Livestock Association.

Austin Cary is back in Washington after a four months' absence in the South.

J. Girvin Peters is on a visit with State Forester Maddox of Tennessee. Last week Mr. Peters made a quick trip to New Hampshire on forestry matters.

District 1

The main mill of the Anaconda Mining Company at Bonner, Montana, was destroyed by fire on January 16. The loss is estimated at $500,000. The granary, containing about $10,000 worth of feed grain, was also destroyed. About 250 men are thrown out of employment.

The destruction of the entire plant was prevented by hard work of the volunteer firemen, many of whom worked at imminent risk of their lives. The chief engineer of the company stuck to the boiler room and kept the pumps going to prevent the spread of the flames.

J. W. Streit has resigned from the Forest Service after years of service, most of which was in the District Office on Settlement work.

A Forest Supervisors' meeting will be held at Missoula beginning February 10 and will extend over about four days. The tentative program provides for a consideration of organization problems. It is not intended to consider very extensively, if at all, questions of regulations or details of administration.

District 3

The Potato Patch fire of last summer on the Coconino covered an area of 960 acres. On the basis of a field estimate the damage is as follows: Merchantable timber, $2,822; reproduction, present value, $124.32; forage, $48; total, $2,994.32. It cost $1,837.42 to extinguish the fire. This cost and damage, in other words, represent money for which a fire guard at $90 a month could have been employed for 53½ months or six guards for 9 months.

District Forester Redington has returned to the District from his visit to Madison Laboratory.

T. S. Hansen, who was on military leave, has been restored to the rolls as Forest Examiner and has been assigned to the Ft. Valley Experiment Station.

A mountain lion measuring eight feet from tip to tip was killed in Horse Canyon by Ranger Haynes of the Apache.

Ranger George E. Daler of the Apache, now with the 26th Company 20th Engineers, in a recent letter to Supervisor Winn, writes of his being in a French hospital with a broken left leg and a mashed foot.

Captain John Hance, famed as an old-time guide and prospector of the Grand Canyon country, died on January 6. Captain Hance is reputed to be the first white man to settle on the south rim of the Grand Canyon and is known by nearly all who visited the Canyon during the past twenty years. Many visitors of note were guided by Captain Hance, who had an endless array of stories of the region.

There were 272 employees under appointment in the District on December 31, 1918. Of this number, 44 were employed in the District and 228 on the Forests. In addition there are 60 employees on furlough, of which 42 are Forest Rangers.

The Clifton-Springerville cooperative road project agreement has been approved by the Secretary. This is the largest project in the District to be undertaken under the Federal Aid Road Act. The project is 93.94 miles in length and extends from Metcalf to Alpine, Arizona. The estimated cost is $550,000, of which Greenlee County will contribute $275,000 and Apache County $20,400. The project is in country up to the present accessible to pack outfits only, and on completion will form a connecting link between the Ocean-to-Ocean Highway and the Southern National Highway. Under the terms of the agreement the Federal Government will construct 60.62 miles, Apache County 8.21 miles, and Greenlee County 33.32 miles. This road will be an asset to the Forest Service and the public in general. It will enable residents of Clifton to get fuelwood and the mining companies can secure mine props and lumber for local use and not be dependent on material shipped in from the Pacific Coast. Stockmen will be able to haul in supplies instead of having to pack in burros.

District 6

Resolutions commending the work done by the Forest Products Laboratory and advocating larger appropriations for carrying on this work were adopted by the Western Red Cedar Shingle Congress, at Seattle, January 8 and 9. Logging Engineer L. A. Nelson and C. W. Zimmerman, Engineer in Forest Products, attended the Congress. Mr. Nelson read portions of Tiemann's report explaining the causes of the washboard effect on the shingles through kiln-drying. Several papers were submitted to this Congress on the reasons and remedies for the washboard effect on kiln-dried shingles, in a competition for a $50 prize offered for the best paper on the subject.

E. N. Kavanagh and J. L. Peterson attended the meeting of the Washington Wool Growers at Yakima, Wash. About one hundred and fifty sheep men were present. Mr. Kavanagh discussed the question of five-year permits and Mr. Peterson spoke on poisonous plants, illustrating his talk with an exhibition of the death camas, lupine, and water hemlock. Fighting scabies, transportation rates of sheep to summer ranges, and the different prices given for wool at the various concentration points during the war were among the subjects discussed. The Association protested against the variation of wool prices.

Thomas P. MacKenzie, Commissioner of Grazing at Victoria, B. C., and formerly in charge of the Office of Grazing, was a recent visitor in Portland. Mr. Mackenzie is working out a plan to accommodate from 50 thousand to 100 thousand Oregon and Washington sheep and a smaller number of cattle on the Forest ranges of British Columbia during the summer months.

Forest Examiner Merritt and Telephone Engineer Allen, of the District office, and Supervisors Reid and Sylvester, of the Colville and Wenatchee, attended the meeting of the Consolidation Committee of the Western Forestry and Conservation Association held at Spokane last week.

An estimate of the cost of disposal of the fire hazard caused by the selective system of cutting carried on in connection with the airplane spruce operations in Clatsop and Lincoln counties, Oregon, will be made by Captain Markham, of the Spruce Production Division, State Forester Elliott, and Forest Examiner Chapler in company with the owners of the different tracts. The estimate will also include the cost of disposal of the debris caused by the construction of about fifty miles of logging railroad. Similar estimate has already been made in Washington by Captain Markham, G. C. Joy (chief Warden of the Washington Forest Fire Association), and Ranger Chris Morgenroth, of the Olympic.

Forest Examiners Kan Smith and Walter H. Leve, of the District Office, and Ranger Nettleton, of Alaska, are the first three former members of the Service on military leave to be restored to the Forest Service personnel in this District.

Forest Examiner Bruce E. Hoffman has completed the appraisal report for timberlands on the Oregon National Forest which are being considered for another exchange with the Bridal Veil Lumber Company.

Contracts made on the Olympic a year ago for airplane spruce, to be cut by selective logging, contained a clause that made it possible for them to be canceled when "in the judgment of the Forester the unusual emergency now existing in respect to the demand for spruce for war purposes ceases to exist." Accordingly these contracts are being canceled as fast as written application therefor is received from purchasers. In most cases operations were suspended suddenly on November 11, 1918, and no falling or removal of timber has been done since. The purchasers, however, are being required to clean up the areas as far as is essential for compliance with the fire protective clause in the contract.

Forest Examiner T. M. Talbott left this week for the Santiam to gather additional evidence in connection with a fire which did a large amount of damage to National Forest timber on the Santiam last September, and the responsibility seems to rest on a lumber company operating there.

More than eleven thousand acres of excellent spruce timber in Lincoln and Coos counties, Ore., were purchased several months ago by the Spruce Production Corporation for airplane purposes. Since they will not be needed for the purpose planned it was the hope of some in District 6 that they might be retained permanently in Government ownership and perhaps added to the National Forests as a permanent reserve of high-grade spruce. A recent letter from General Disque, with whom the District Forester has been in communication, states that it is his decision not to have the tract retained, primarily because the Government railway built to exploit this timber will not be justified without early logging of the tract.

Major Oakleaf, in a recent letter, states that he intends to return to the Forest Service within a few days. Upon his return he will be installed in his former position as Chief of Products.

Logging Engineer Andrews is on the Deschutes, making a supplemental examination of the timber in the Big River watershed. Formal application has been received for a large quantity of Government timber on this watershed.

H. D. Foster, in charge of Maps and Surveys in the District Office, addressed the weekly meeting of Scout-masters of Portland at the Central Library on the subject of making and reading maps.

District 7

The Pisgah Forest is now the proud possessor of six buffalo. The shipment arrived from New Hampshire last week, and so the days of expectancy have at last been fulfilled.

Our National Elk Herds

The elk herds of the United States, particularly those on the National Forests adjacent to the Yellowstone National Park, have been the subject of extensive personal study during the past year by Colonel Graves. Some of his conclusions are set forth in a program which has just been prepared.

For a number of years the elk within the Yellowstone National Park and surrounding National Forests have been the subject of much thought and study, in an effort to develop a policy that would preserve them from extinction. Definite investigations concerning the elk situation on the National Forests about the Yellowstone National Park were begun by representatives of the Biological Survey and the Forest Service as early as 1911, with assistance from outside sources from time to time.

The Remaining Elk

Formerly widely distributed, the elk are now being crowded into limited areas and are in danger of complete extermination.

There are probably about 70,000 elk in the United States. The largest herds are in the Yellowstone National Park and the surrounding National Forests. Other important herds are the Sun River herds of some 2,500 elk in the Lewis and Clark National Forest of Montana, the Olympic herds of Roosevelt elk, comprising some 7,000 head in the Olympic National Forest of Washington, 1,750 in the White River, 800 in the Battlement and 500 in the Gunnison National Forests, Colorado, 200 in the Boise National Forest, Idaho, and the small herds of the Selway and Clearwater National Forests, Idaho, aggregating a total of about 13,500 animals. In addition, small native herds, or herds built up by restocking, and aggregating each from 25 to 500 animals, are found in many other National Forests and Parks, such as the Colorado, Pike, Durango, Leadville, Sopris, Rio Grande, Cochetopa, Routt, and Arapaho, in Colorado, the Black Hills, in South Dakota, the Big Horn, Shoshone, Bridger, Washakie, Medicine Bow, and Wyoming, in Wyoming, the Mt. Pisgah, in North Carolina, the Cache, Caribou, Challis, Idaho, Minidoka, Payette, Salmon, Sawtooth, Targhee, and Weiser, in Idaho, the Fish Lake, in Utah, the Wallowa and Rainier in Washington, the Oregon, Siskiyou, and Siuslaw in Oregon, the Sitgreaves, in Arizona, the Wichita, in Oklahoma, and elsewhere. In addition, there are a number of small private herds on large estates, including several in the East.

The Yellowstone Herds

The elk herds of the Yellowstone National Park are of the greatest importance, for they comprise the largest number of animals and there is available the largest area of public land suitable for their perpetuation. The mountains and the headwaters of the Yellowstone and Snake Rivers have long been the resort for a large number of elk. They here find ideal summer range conditions. In the fall they drifted down from the mountains and scattered over the bordering open valleys and plains. These annual movements were later interfered with by the appearance of settlers, who fenced up the areas formerly affording the winter forage of the elk. Also a conflict came between the stock and elk for the range, and man other elk were killed by the settlers and sportsmen. The destruction of the elk has never been as wanton as that of the buffalo, yet the herds are rapidly decreasing. The elk situation has now reached a crisis. Definite steps must be taken to insure adequate winter feeding grounds, proper safeguards to reduce losse from overshooting, predatory animals, and starvation.

Attitude of the Public

To accomplish this the cooperation of the public is essential. The public is already deeply interested. There is an increasing sentiment throughout the country for the perpetuation of our big game and other wild life. The passing of the American wilderness, the diminishing number of game animals, the entire disappearance of certain kinds of game and other forms of wild life from large sections of the country, and the recognized inadequacy of some of the customary methods of wild life conservation as applied to game, have deeply impressed the public mind. People are beginning to demand better legislation and more intelligent and efficient administration for the conservation of game. It is probable that we are at the turning point and that in the near future constructive upbuilding and intelligent utilization of wild life will replace the present imperfect methods.

Wild life conservation is not a mere fad. Its value is hard to measure in definite terms, but is none the less real and tangible. While those most active in urging measures of conservation generally do so on the ground either of the sentimental or the sporting interest in wild life, a much wider range of interest is involved. A region in which wild life is abundant is the richer by reason of it. The recreational values of the region are vastly enhanced. Oftentimes the indirect economic value of big game, through the expenditures of those brought into a locality by its presence, make it a resource of prime importance. Interest in game conservation in such localities can be counted on, and some pecuniary sacrifices incident to game administration will be cheerfully and gladly accepted. With the right leadership and a really intelligent and carefully devised policy of game administration, hearty public approval will soon follow. These considerations apply with special force to elk conservation.

The Place of the Elk

The perpetuation of elk under natural conditions means that the use of elk ranges by domestic stock must be in certain parts prohibited and in other parts allowed only under careful restrictions. This definite conflict in the use of the public property as between the wild herds and domestic stock has given rise to extensive controversies. Once for all a settled public policy must now be established as to the place of the elk in the development of the Yellowstone National Park and neighboring Forests.

Land and Elk

The elk problem is a land problem. Because an elk is a grazing animal, it must have grass and herbage to support it. It is a gregarious animal, running in bunches and herds, particularly in the spring, fall and winter. It, therefore, requires feed in considerable quantities. Owing to its wandering and migratory habits the elk moves over a wide territory during the year, with special needs for forage during each of the four seasons. The elk is not like mountain sheep, moose and white tailed deer, able to find feed in the mountains and forest to maintain it during the winter. It needs during much of the year the same kind of feeding grounds as domestic stock. We have therefore the problem of furnishing to the elk herds of the Yellowstone region enough land on which they can, during the different seasons, find adequate forage.

The key to the situation in this region is the Yellowstone National Park and the surrounding National Forests. Here are lands owned and controlled by the public. Here exists a vast mountain region which so far as the summer range of the elk is concerned is adequate to support many more of them than now live there. Unfortunately, when these reservations were established, and during the early years of their existence, the needs of winter range for the elk were not given consideration. It was a question of land chiefly valuable for its scenic interest and for forest and water conservation. Considerable winter elk range still remains in the public domain, but certain areas which are essential to the maintenance of the elk herds were not withheld from entry under the general land laws and parts of them have become private holdings.

From the foregoing it must be clear that primarily the elk problem is one of land control; first, to safeguard for elk the use of certain of the public reserved lands, and, second, to secure for their use such additional lands now privately owned as are essential to the life of the wild herds.

Specific Problems

There are three groups of elk in the Yellowstone region which may for convenience be called the Northern, the Eastern, and the Southern groups. The Northern groups comprise slightly more than 19,000 animals, the number having been determined by actual count conducted in the spring of 1917, by representatives of the U. S. Department of Agriculture, Department of the Interior, and State of Montana, working cooperatively. This herd summers in the Yellowstone Park at the he waters of the Yellowstone, Gallatin, and Madison rivers, and drifts northward to the northern part of the Park and nearby National Forests for the winter.

The Eastern group of about 3,000 head, as determined by actual count and close observations, finds its summer home on the eastern side of the Park on the headwaters of the Shoshone River, and drifts out into the Shoshone National Forest to winter.

The Southern group summers in the southern part of the Yellowstone Park and the high mountains of the Teton, Wyoming, and Bridger National Forests, and passes the winter in the lower portion of the Teton Forest on Snake River and its tributaries. This herd comprises from 16,000 to 18,000 animals. The number is based on an actual count made by representatives of the Government in the spring of 1916, and after making additions and reductions for the natural increase and loss since the count was made, conservative figures place this herd at slightly less than 18,000 head.

The Program

Summing up the situation the following is the proposed program:

1. The maintenance of herds in the Yellowstone National Park region at at least their present number, estimated to be from 40,000 to 45,000 elk. This includes those wholly within the Park, those entirely within the surrounding National Forests, and those occupying the Park a part of the time and the National Forests the remainder. The present herds should not be increased in size except at certain points where there is now available surplus winter range.

2. The use of the annual increase or surplus for legitimate hunting and distribution to build up other herds.

3. State legislation to authorize limitation of hunting licenses, in number and by regions, the limits and seasons to be determined from year to year jointly by the State and Federal officers.

4. Under existing Regulations of the Secretary of Agriculture recourse to the Federal Courts is authorized in cases of violation of the State game laws on the National Forests. The Federal courts should be used to supplement and strengthen the administration of State game laws.

5. The closest cooperation should exist between the States and the Federal Government and most vigorous efforts made to stop all illegal practices affecting the welfare of the elk.

6. The addition to the Absaroka and Gallatin National Forests of the area north of Gardiner, Montana, withdrawn under date of April 16, 1917.

7. The acquisition by purchase or exchange of the necessary portions of the private land within this area.

8. State legislation establishing certain needed portions of these and adjoining areas as a game refuge.

9. The progressive readjustment of grazing permits on certain portions of the Gallatin and Absaroka National Forests to meet the present or future requirements of the Northern elk herds for winter range.

10. The consideration of Legislation establishing a Game Refuge in the Madison National Forest, and making certain extensions of the existing State game preserve in the Gallatin National Forest.

11. The progressive extinguishment of the sheep grazing privileges in the area of the Absaroka National Forest north of the Park to the Boulder Divide in order to prevent any possible conflict within this area between wild life and domestic stock.

12. The extension of the Yellowstone National Park southward to include the areas in which the greater part of the southern group of elk find their summer range.

13. To acquire in Jackson Valley, Wyoming, about 10,000 acres of private lands adjacent to the present winter elk refuge which are essential to provide needed additional winter forage.

14. To continue, and at certain points enlarge, the three so-called restricted areas of winter range, that adjacent to Jackson Valley Elk Refuge, that situated on the Gros Ventre River, and the third in the valley of the Hoback; and to progressively work out the grazing problem to meet the full requirements of the elk which winter in this section or which may be induced to do so. The restrictions on the number of domestic stock permitted there already put into effect constitute a long step in this direction.

15. To secure State legislation to establish these restricted areas as game refuges.

16. To enlarge the present Government ranch under administration of the Bureau of Biological Survey in Jackson Valley; and to establish an auxiliary hay farm within the Gros Ventre restricted area and another within the Hoback area in order to provide forage during severe seasons for animals wintering in these sections, and thereby constitute an added inducement for more elk to remain in these areas instead of drifting into Jackson Valley.

17. To extinguish progressively the few sheep grazing preferences at the head of Willow Creek in the Teton National Forest. This will eliminate all sheep grazing from the area now within the Teton Forest.

18. The most vigorous campaign possible against predatory animals that destroy elk.

19. Certain readjustment of grazing privileges in the Roaring Fork region of the Bridger National Forest to meet the needs of winter range for the elk.

20. Consideration of State legislation needed to require hunters to report the number and kind of game animals killed, and to preserve and make economic use of the meat.

21. Further study of the grazing situation southwest of the Park to determine whether there should be any further readjustment or restriction of the allotments there to domestic stock. The data at hand are not complete enough to determine this question.

22. A special study of the migratory drift, and winter and summer habits of the elk, to supply certain facts now in doubt. This should be in addition to regular observations by local officers to secure information bearing on the condition of the herds, annual increases, losses, and other questions.

WEEKLY BULLETIN

Forest Service - Washington Office

(Not for publication)

February 3, 1919.

Return of the 12th Battalion

The 12th Battalion of the 20th Engineers (Forestry), originally the 2nd Battalion of the 10th Engineers, is homeward bound on the Battleship North Carolina, which is due to reach New York on February 6. Under the orders of the War Department the distribution of the men in this country for demobilization will be as follows:

Twelfth Battalion 20th Engineers composed of Headquarters Medical detachment 35th, 36th, and 37th companies, 16 officers, 727 men, divided as follows: American University, 1 officer, 80 men; Ft. Douglas, Utah, 3 officers, 36 men; Ft. George Wright, Wash., 4 officers, 114 men; Ft. McDowell, Cal., 4 officers, 106 men; Ft. Slocum, 61 men; Jefferson Barracks, Mo., 74 men; Camp Meade, 4 officers, 256 men.

Thirty-Second company, 20th Engineers, 2 officers, 116 men, divided as follows: Camp Grant, 1 officer, 65 men; Camp Lewis, 36 men; Camp Meade, 1 officer, 15 men.

Socks and Sweaters for the Serbians

A generous consignment of woolen socks and sweaters was donated by the Forest Service committee in charge of these supplies from the Lumbermen's Relief Fund, to the Serbian Relief Committee for its use in Serbia. Miss Helen Lozavitch, a member of the Serbian Relief Committee, who sails shortly for Serbia, will take the donation with her and see to the distribution.

Forest Fire Control in Louisiana

Organization of a popular movement for forest fire control in certain parishes in Louisiana was completed recently. This movement was initiated by M.L. Alexander, Commissioner of Conservation, and R. D. Forbes, Superintendent of Forestry for Louisiana.

The general meeting was held at the fair grounds at Covington, and the citizens worked hard to entertain the visitors and make the meeting a success. A barbecue was one of the big features of the day. A long array of speakers participated, among them Governor R. G. Pleasant, who made a brief address on general matters, leaving the discussion of the fire question to the experts.

The work of the new association is to be taken care of by a board of 24 directors, of which 5 will constitute a quorum for the transaction of business. A committee was appointed to draw up a charter and the necessary rules and regulations.

J. G. Peters represented the Forest Service and outlined the value of fire control and measures found successful in other regions.

Trees in Illinois

The importance of wood as building material and the necessity for conservation of trees is recognized by Governor Lowden of Illinois as a paramount issue in the economic life of the country. Governor Lowden has repeatedly urged the planting of trees and quite recently stated that he knew of no single acre of land in Illinois, even though it was not suited for cultivation, that could not be made to produce trees successfully. There is need for wise laws whereby every acre which will not produce wheat or corn will be made to grow trees. The proper step in this direction would be to exempt these lands from taxation, saying to the owner that he plant the trees, pay no taxes, and then when his children or grandchildren harvest them they shall pay a fair percentage of the proceeds into the treasury of the State.

Boxes for Foreign Shipment

Peace-time use of the results of war-time experiments is one of the problems to be worked out by the Laboratory. An important line of war-time investigation had to do with boxes for war material exports. Boxes designed for domestic uses did not meet the requirements for overseas shipment. Reducing losses by breakage and lessening demands on cargo space and cost of construction for packages sent overseas are some of the important achievements by the Laboratory in this connection. The results obtained during the war are now available for peace-time use and mean much to the commercial interests.

Recently a demonstration was made before representatives of a Chicago steel manufacturing plant of a shipping box so constructed as to prevent loss of goods through breakage and to economize lumber and car space.

The test was made by placing boxes of varying sizes and kinds in the box-testing machine, a special machine designed by the Laboratory. This machine tumbles the boxes about so that they are subjected to all the vicissitudes a box is apt to experience in actual freight transportation.

Considerable strength is added to boxes by steel strapping, and it was found that a steel strap placed four inches from each end of a box filled with canned food increased the capacity to stand rough usage three times.

National Lumber Manufacturers Congress

Plans are under way for the Annual Meeting of the National Lumber Manufacturers to be held in Chicago in April. Representatives of the various Government bureaus having dealings with the lumberman are to be invited. A three-days' session is planned and the discussion is to cover trade extension, publicity, lumber economics, advertising, and logging operations.

Export Sales Corporation Organized

Manufacturers of southern yellow pine have perfected an export organization to sell their product abroad. About forty manufacturers participated. This combination for export business is possible under the so-called Webb-Pomerene Law which permits combinations of this kind for the handling of foreign trade, although such combinations are not permitted for domestic commerce.

Southern yellow pine manufacturers expect to be called on to supply the major portion of the lumber required for reconstruction in the war-torn countries.

Lumber Conditions in England

All permits for the domestic purchase and sale of wood in Great Britain have been discontinued, much to the relief of the dealers. This means that official sanction will no longer be required in domestic buying and selling.

Prices are not affected by this order, these still being under Governmental supervision. Probabilities are that the maximum prices to consumers will be reduced, as there has been a decided fall in the freight market.

A Forest Herbarium

A recent check identification of specimens in the Forest Herbarium of the Black Hills Forest disclosed several interesting facts.

The herbarium comprises 473 specimens and the check identification showed that 64 species had never been previously collected on a National Forest, as far as the records in the Washington Office indicate. The net result of the check identification was to add a large number of Black Hills stations to the distribution data on the Washington Office distribution list and two additions to the District 2 grass list. One new grass not included in the grass booklet was brought to light.

The identification of these specimens in the Bureau of Plant Industry was done by specialists in the particular groups involved. All grasses were identified by Prof. Hitchcock and Mrs. Agnes Chase, who are rated as the most eminent systematic agrostologists in the United States. The willows were determined by Carleton R. Ball, who wrote the willow portion of Coulter and Nelson's Manual of Rocky

Mountain Botany. Frederick V. Colville, the Botanist of the Bureau of Plant Industry and Curator of the U. S. National Herbarium, personally identified the species of Juncoides, Juncus, Grossularia, Ribes, and Vaccinium, of which genera he is the authority. William R. Maxon, Assistant Curator, one of the foremost American authorities on Pteridophytes, personally determined the ferns. William H. Lamb, of the Forest Service, identified the conifers and ceanothi.

The larger portion of the 473 specimens forming the herbarium were collected by John Murdoch, Jr. Subsequent additions were made by various other Forest officers in connection with their regular duties. The work of collecting was begun in 1908 and extends over a period of ten years.

Prospecting in the National Forests

The District Forester at Denver was recently the recipient of a letter from a prospector who had spent the summer on the Leadville Forest. Users of the Forests seldom find time to let us know that they have found things satisfactory. Of course our constant aim is to have matters just right, and a letter that indicates we have succeeded in a particular case helps immensely.

Denver, Colorado,
December 3, 1918.

U. S. Forest Service,
Denver, Colorado.

Gentlemen:

I wish to thank the Service for the assistance and cooperation rendered me while I was prospecting in the Buffalo Peaks and Horseshoe country near Fairplay. I certainly appreciate the help Mr. G. C. Wallace, ranger there, gave me; he did all in his power to make my trip successful. If all rangers were like him, I wouldn't hesitate to go into any of our Reserves to prospect. Thanking you, I am,

Yours truly,
(Signed) R. K. Thomas.

The Fourteenth Census in 1920

Provision for the necessary machinery to take the decennial census in 1920 is made in a bill under consideration in Congress. The report on the bill just made by the conferees provides the following of interest to foresters:

"That a census of the population, agriculture, manufactures, forestry, and forest products shall be taken in 1920 and every ten years thereafter. * * *

"The schedules of inquiries relating to manufactures, to forestry and forest products, and to mines and quarries shall include the name and location of each establishment; character of organization, whether individual, corporate, or other form; character of business and kind of goods manufactured; amount of capital actually invested; number of proprietors, firm members, copartners, and officers, and the amount of their salaries; number of employees and the amount of their wages; quantity and cost of materials used in manufactures; principal miscellaneous expenses; quantity and value of products; time in operation during the year; character and quantity of power used; and character and number of machines used." * * * *

Forestry Meeting in New York

After a heated and extended debate on the occasion of the seventh annual meeting of the New York State Forestry Association in New York, the following resolution was adopted:

"Whereas, the association believes that the agencies concerned with forestry in this State should formulate a broad policy for the economic use of forest land in the State and that this policy should look forward to the removal of the constitutional inhibition at present preventing effective use of the State forest land.

"Whereas, this period of reconstruction is a particularly opportune time for the formulation of constructive policies for the use of forest land.

"Resolved, That the president be authorized to appoint a committee to be composed of one representative from each organization interested in forestry in this State to formulate the indicated policy.

"It is suggested that the following organizations shall be represented:

1. Conservation Commission.
2. New York State College of Forestry.
3. Cornell University.
4. New York State Forestry Association.
5. Association for the Protection of the Adirondacks.
6. Empire State Forest Products Association."

The proponents of the resolution feel that the inhibition against cutting of timber in the State forest in the Adirondacks is very detrimental to the best interests of the State and hope for a removal of this restriction in order that there may be a proper use of the timber resources. As things stand now the State forest lands in the Adirondacks are parks without any chance at the proper utilization of the timber resources.

Washington Notes

Captain Stanley L. Wolf has returned from France where he was on duty on the General Staff of the S.O.S. Mr. Wolf will return to the Forest Service about February 16.

Forest Supervisor J. D. Coffman, of the California Forest, has completed his detail in Washington and has returned to his Forest.

Quite a haul was made last month in getting back old Forest Service publications from the field. The results were as follows:

District Office, Albuquerque			1,214
Bighorn	National	Forest	34
Clearwater	"	"	42
Harney	"	"	16
Madison	"	"	17
Weiser	"	"	153
Minnesota	"	"	13
Payette	"	"	267
Routt	"	"	6
Siskiyou	"	"	10
Snoqualmie	"	"	118
Stanislaus	"	"	19
Wallowa	"	"	21
Hayden	"	"	101
Holy Cross	"	"	25

E. C. Rogers, of District 1, is in Washington on a month's detail for research work in planting and silviculture.

The Protection and Propagation of Game in Relation to the Public Domain and the Administration of the National Forests was discussed by E. W. Nelson, Chief of the Biological Survey and Associate Forester A. F. Potter, at the regular January meeting of the Washington Section of the Society of American Foresters.

District 2

The annual meeting of the National Livestock Association was held at Denver from January 18 to 25, inclusive. Secretary Houston and Associate Forester

Potter were in attendance and both addressed the convention. No protest was raised against the recent increase in grazing fees nor was any criticism made against any other feature of the grazing policies of the Department as administered by the Forest Service.

Mr. Clay Tallman, Commissioner of the General Land Office, advocated a regulated control of grazing on the public domain not coming under the provisions of the 640-acre law along lines of administration followed by the Forest Service in the National Forests.

Mr. Tallman seemed to feel that the methods of regulation, as worked out by the Forest Service, would fill the bill, but that in this instance the application of the regulation should be by the Department of the Interior.

Game was discussed in the sessions of the public lands committee of the Association, and particularly the condition in Jackson Valley. It was decided to bring before the committee next year a review of game conditions in reference to the grazing industry.

The question of game was also discussed by the Colorado Cattle & Horse Growers' Association. No opposition was expressed, and the resolution passed last year remained in force. At that time the Association expressed itself as in favor of the protection of game where there is no interference with grazing of stock. The State Association feels that the matter is for consideration by the local associations.

The five-year grazing plans for the Forests in District 2 were gone over and approved by Mr. Potter while he was in Denver during the meeting of the National Livestock Association. Authorizations have been approved for all Forests in the District excepting the Colorado, Michigan, Minnesota, and Nebraska. In addition, no cattle and horse five-year authorization was given the Hayden and the Routt, almost entirely on account of on-and-off permits in the case of the Hayden and the readjustments made necessary by the recent large eliminations from the Routt. In general, the five-year authorization will take care of the present Class A and B preferences within the restrictions imposed by the five-year regulations. The total five-year authorization for the District is 339,700 cattle and horses and 1,298,100 sheep and goats. The total allowances for the District for the year 1919 are 570,000 cattle and horses and 1,612,280 sheep and goats, and the total estimated five-year capacity is 552,708 cattle and horses and 1,557,230 sheep and goats.

One of the most popular exhibits of the annual Stock Show which was held in Denver from January 18 to 25, judging from the point of attendance, was that of the U. S. Forest Service. The exhibit was arranged by Messrs. Hutchinson and Barker of the District Office and consisted of models showing the various phases of National Forest work. In addition to these, one whole side of the exhibit was devoted to specimens of game found in the National Forests. A count made of the attendance showed that 24,000 persons visited this exhibit.

Skiing is the big winter sport on the Routt National Forest; and Steamboat Springs is the center of the sport, which is attracting many people each year. The Forest Service is doing all in its power to cooperate with the sportsmen and for the benefit of visitors interested has distributed a series of one-page mimeographed circulars describing five different ski trips that can be made from Steamboat Springs. The topography of the adjacent country is admirably suited for the sport. The trips as mapped vary from those of 4, 5, and 7 miles in length, requiring from 1½ to 4 hours time, to those from 14 to 22 miles long, requiring from 1 to 2 days.

S. R. DeBoer, Landscape Architect for the city of Denver, presented a paper on "The Place of Landscape Architecture in the Development of National Forests and National Parks," before the Denver Section of the Society of American Foresters at its third meeting this winter. At the previous meetings papers were presented by Crosby A. Hoar on "What is Potential Forest Land," and Fred R. Johnson on "Planting in the Development of the National Forests."

Harry W. Elofson, second lieutenant of field artillery at Fort Sill, Okla., on discharge from the army, has been appointed Forest Ranger in District 2 and will be engaged on grazing investigations and reconnaissance work. He was appointed as a result of an examination for ranger which he took in Oregon before leaving for military duty.

Captain A. H. Cook has returned to his duties in District 2, and is engaged in a revision of the specifications and plans for permanent improvements, looking toward the increase of the $650 limit for buildings on the National Forests. Mr. Cook will also assist Mr. Keplinger in reviewing the educational work which he is now conducting.

Mr. F. E. Bonner has assumed charge of the District Engineer's Office until permanent arrangements have been made to fill the vacancy in the position caused by the death of R. E. Pratt.

The advertised round-up of all cattle on the Pike Forest was made during October and November, and the effort is well repaid by the results that were obtained. There was a feeling among the Forest officers that several of the permittees were running more stock than their permits called for and as the owners would not acknowledge this fact the Forest officers made a round-up. Many owners protested against the round-up, but nevertheless it was made. The stock graze yearlong, and as there were no pastures or feed available to hold them while the count was on, the stock were gathered, tallied at the corrals and paint-branded, and then turned loose again.

Of a total of 25 permittees the tally showed an excess in 12 cases. The most extreme case was one where until 1918 the permit was for 125 head and the tally was 330 head. This permittee generously consented to strengthen his application last spring to 150. In this connection it is of decided interest to know that this permittee has been a very bitter and persistent opponent of the Forest Service on this Forest. Another permittee on the same district who likewise has been bitter against the Service was found to be 100 head long by actual count.

The purchase of portable wood-cutting outfits for use at ranger stations is under consideration. Cutting of cordwood by Forest officers for use at the ranger stations is a very important item and in some instances a serious one on account of the large amount of wood needed, particularly when the station is the headquarters for several men. To have an adequate supply of cordwood available takes considerable time for cutting and in these days of shortage in men and extra jobs it is almost impossible to maintain a good-sized wood pile. To get the full value of these outfits it will be necessary to work out a definite plan to handle and route the machines. The intention is to cut at least a two-years' supply at each station where a set-up is made. The mills have a rated capacity of from 20 to 40 cords per day.

District 3

Two former air pilots in the army air service were recent callers at the District Office to find out what the Forest Service was doing in airplane fire patrol. Times have changed. Not so long ago difficulty was experienced in getting a lookout to climb the 116-foot lookout tower on the Sitgreaves. Women lookouts were the next sensation and next it may be the aviator on fire patrol duty.

The Office of Public Roads has just submitted for the approval of the District Forester the plans and estimates for the Clifton-Springerville road, the Cimarron-Taos road, and the Tijeras Canyon road. This means that since all preliminary work is now completed construction will begin on these projects at a very early date.

The camping season on the Grand Canyon camp grounds opened March 28,1918, and closed October 26, 1918. The banner month was May, with 306 campers; August was a close second with 301; 1,678 people from 30 different states used the camping grounds, Arizona leading with 669 and California following with 464; 498 cars were parked on the area. During the year the Forest Service built seven additional cement fireplaces, making a total of 14 on the area. Camping permits were issued free, the only requirement being "leave a clean camp and observe the 'six rules'."

With deep regret announcement is made of the death of Lieutenant Harry A. Chamberlain, formerly Forest Ranger on the Tonto. Lieutenant Chamberlain died in France of wounds on October 17. Information of her husband's death was not received by Mrs. Chamberlain until she read of it in the Official Bulletin of January 6, 1919. It appears that the telegram from the War Department bearing the news of the death of Lieutenant Chamberlain sent last November was not delivered to Mrs. Chamberlain.

Harry Chamberlain was a graduate of Pennsylvania State College in 1914 and was employed in this District since 1916, first as Forest guard on the Carson and later as ranger on the Tonto. He enlisted in the 20th Engineers and later transferred to the Infantry where he received a commission as second lieutenant.

District 6

Major H. B. Oakleaf has returned and resumed his duties as Forest Examiner in the District Office. He is now busy again on the preparation of a publication on "Lumber Manufacturing in the Douglas Fir Region," which is a companion publication to Bulletin 711, "Logging in the Douglas Fir Region," by W. H. Gibbons.

The office of Products is now working on the annual lumber-cut census.

The increased Maps and Surveys work necessitates the employment of an additional draftsman in Victor H. Flach.

The formulation of Land Exchange policy plans has been begun for the four Forests in this District on which land exchanges are legally possible.

Thomas Hunt, Supervisor of the Chugach, has returned to his headquarters at Cordova, having completed a two-months' detail in the District Office.

Influenza attacked Entry Surveyor Root and his party of packer and assistant while at work in an inaccessible part of the Wallowa. The party was held up on the straw in a barn during the customary three-days' fever period. Survey work on that Forest has now been abandoned for the season.

Deputy Supervisor Cleator has been transferred from the Colville to the Office of Lands in the District Office for the winter.

The Flu is going the rounds in the Portland Office and many of the employees are absent on this account.

As a safeguard against Flu, about twenty members of the District Office (including the District Forester) assembled and were inoculated with Pneumococcus lipovaccine.

We are still hunting things that were lost in moving from the Beck Building to the Post Office Building.

District 7

Acting District Forester F. W. Reed is back in Washington from a three-weeks' visit to the West, which included the conference held at Ogden to discuss grazing matters, in which all the Districts participated. On his homeward trip, Mr. Reed, accompanied by District Forester Smith Riley, spent a week on the Wichita Forest where game propagation and preservation is the major activity. It is felt that the time has come to work out an attractive game working plan. Up to the present we have been simply drifting. At the Wichita we have a buffalo fence enclosing about 8,000 acres and some buffalo and elk. Also scattered over the Forest are a lot of deer and a bunch of wild turkeys that are doing pretty well; but up to date the object has not been well defined. Are we going to continue, as we have in the past, to be more interested in the grazing on the Forest than anything else and look upon the above-mentioned animals as simply incidental, or are we going to take the position that the principal object for the existence of that National Forest is as a Game Preserve and that the proper care of the game comes first? That being the case, are we going to protect the buffalo, elk, and deer simply to get as many as we can or are we going to build up the herds to some proper number and then develop plans for disposing of the surplus? If we are going to dispose of the surplus created in this way, how are we going to do it? Are we going to give them away or let people hunt and kill them, or have the Forest Service sell them on the general market, or is the plan to be to use this surplus as a source of supply for planting other areas?

Another question is that of introducing other species into the Preserve. Should it be our definite policy to reintroduce other species, like the antelope, which were once native there, or should we go further and introduce species new to this region, and how far should we go in that direction?

Recreation possibilities also give the Wichita big value. It is the only place for miles around capable of furnishing mountain scenery and mountain air to the tired business man, and the citizens from the neighboring towns are coming there in increasing numbers every year, as the automobile roads are being improved and the country made more accessible. So far we have only reached that point where it has been decided that the Forest as a whole is too small to allow any of it to be monopolized under individual special use permits which would interfere too much with the game propagation or with the proper enjoyment of the region by the general public. The time has come when we have got to work out more definite plans for making the Forest attractive and more easily enjoyed by the public at large, who will come there to see the game and to picnic, or perhaps to camp for a few days.

Last week's Bulletin told of the shipment of six buffalo to the Pisgah National Forest and Game Preserve. The establishment of the elk and buffalo herds within the fenced enclosure is of interest to members of the Service because of the varied sources of cooperative effort which made the establishment possible, and the way in which the plan of handling game on this Forest ties in with the broad policy of game conservation now occupying the attention of the Service.

Both elk and buffalo once ranged throughout the Southern Appalachians. They were exterminated in North Carolina about the time of the Revolution. The return of the species to their former haunts and range has met with popular approval and the future of the small herds will be watched with interest.

Supervisor Rhoades states that the coming of buffalo to Pisgah completes the plan which brought out the cooperative efforts of more people and organizations than one might naturally expect. In fact it would be difficult to duplicate the feat again. The Appalachian Park Association and the Forest Service became interested in placing buffalo on the Pisgah Forest, and through the energetic efforts of these two organizations the city of Asheville and the county of Buncombe also became so interested that they contributed about $2,500 towards the construction of a fence. Then the Asheville Board of Trade considered the idea so good that it voted a substantial sum from its advertising funds to be used for the same purpose. When the plan was brought to the attention of the American Steel and Wire Company it not only contributed four miles of its best 88" fence, but also sent down an expert to advise in the building. The Biological Survey procured 25 elk from the Yellowstone and the railroads hauled them free of charge from Montana to North Carolina. The American Bison Society promised to obtain the buffalo and succeeded through the generous gift of Mr. Austin Corbin, who has long maintained a buffalo herd of purest blood in New Hampshire. The Forest Service furnished 1,400 big locust posts and built the fence.

Upon the Forest Service rests the obligation to see that the game is properly cared for. It is the purpose of the Service to protect the game on the Preserve in order that it may have here a refuge and breeding ground from which to replenish the adjacent mountain regions. It is a part of the plan always to keep enough elk under fence to form a nucleus herd and to turn out into the unfenced boundary a number approximately equal to the annual increase in the hope that these will multiply and form several good-sized bands of elk. There are many hundred Virginia deer on the Forest. They thrive wonderfully, but the increase has been checked temporarily by poachers. There is no doubt that this condition will change as soon as prosecutions are handled in the Federal Courts in accordance with the new regulations. About thirty cases are now pending in the Department of Justice.

The Purchased Forests furnish the Forest Service with an excellent opportunity to take the lead in game conservation in the states wherein they are located. In North Carolina it will some day end the vicious county system and substitute a general State law for the perpetuation of its wild life.

WEEKLY BULLETIN

Forest Service - Washington Office

(Not for publication)

February 10, 1919.

Twentieth Engineers Repair French Roads and Salvage Fire-Killed Timber

The American army command intends to leave the French roads used by the A. E. F. for war purposes in good repair before withdrawing, and the forestry troops are getting a big share of the work. In a recent letter to the Forester, Colonel Greeley writes:

"* * * * * Orders require that all of the roads in France which have been in continuous use by the American E. F. be repaired prior to evacuation and that all Engineer troops which can be spared from other duties be made available for this work. At present about twelve companies of forestry troops are at work on roads and it is probable that six or eight companies more will be assigned to this duty. * * * * * This requirement will have the effect of delaying our evacuation probably at least two or three months. One battalion of the 10th Engineers has sailed and I expect that the second battalion will sail by February 15. We may be able to begin the evacuation of the battalions comprising the original 20th Engineers in March.

"Mill operations are practically terminated except in the fire-killed areas in the Landes where we will continue cutting as long as troops are available. It is interesting to note that the American E. F. has installed nine mills specifically to aid in the salvaging of the fire-killed timber of the Landes and has eleven mills all-told working on this project. It can be completed by the middle of May if the troops are available for so long a time. The demands of lumber from the army have continued in heavier volume than we anticipated shortly after the signing of the armistice and we will not have as much of a surplus as I thought at that time. There will still be, including our fire-killed products, probably 2,000,000 ties to turn over to the French together with 6,000,000 or 7,000,000 feet of high grade hardwood logs and a quantity of manufactured lumber."

American Foresters Appraise War Damage to French Forests

We all know what happened to the forest growth in the Somme country. To appraise the damage there about all that is necessary probably is to find out the value of what was on the land before the war began. To get an idea of what the damage would be to all the French and Belgian forests if the Hun had had his way entirely, the same process would be sufficient. Henry Van Dyke gave perfect expression to the German attitude toward other people's trees in his story of the German officer who ordered his men to chop down for firewood fine old beeches bordering the approach to his Belgian host's house, though more suitable wood was right at hand on the same estate. Fortunately, not every forested region on the battle line suffered like the Somme region, and the Hun was kept too hurried and worried to satisfy fully his appetite for destruction.

To appraise the damage done to forest and agricultural lands by the war is a difficult, complicated and important piece of work. American foresters will be pleased to learn that a department for this purpose has been organized under Lieutenant-Colonel Chapman and that it is drawing in a goodly number of the men of the 20th Engineers. Colonel Greeley, in a letter to the Forester, says that "Condon, Work, Ringland, Guthrie, Lowdermilk, and Crossby have already taken up that work and more will probably be assigned to it." It is expected that the scope of the work will be extended later to include forest damages in Italy, Belgium, and the Balkans.

State Forests and State Sawmills in Australia

The report of the Forestry Commission of New South Wales for the year ended June 30, 1918, contains the following items:

"The area of State forests proclaimed and brought under the Forestry Act was increased by 1,338,249 acres, and now totals 4,822,827 acres.

"At the State sawmills 2,702,370 superficial feet of raw timber was converted into 1,861,836 superficial feet of marketable timber. The turnover of the State Industrial Undertaking in the supply of sawn, hewn, and round timber for Government purposes realized a net profit of 12.5 per cent on the capital in operation, and of 10.5 per cent on the total capital employed."

China Gets Forestry Information

The war may be the means of stimulating tremendously the interest of the Chinese in forestry. D. Y. Lin, of the University of Nanking, has just written to Mr. Zon enclosing a long list of questions about forestry and forest products in the United States and going on to say:

* * * * "We as pioneer foresters in China want to do our very best at this time to stir up our people here so that forestry will be given a proper place in the great reconstructive programme. Every bit of information that you can send us will be made use of for our forestry propaganda work here.

"I have kept track of what the American foresters did in France. The war has certainly put forestry at the very front. No doubt forest resources will be rated from now on as indispensable commodities for the preservation of national safety and for the attainment of national efficiency. We hope China will take to heart this great war lesson in forestry."

Last December the Forest Service supplied the Y. M. C. A. with a set of lantern slides and a canned lecture on the forests, their value and their perpetuation, especially arranged for presentation to Chinese workmen in France. It is hoped that something may be done in this way to help the spread of the forestry idea in the country that probably needs it most of all the world.

The Rolling Sawmill

The taking of the annual lumber census is not altogether devoid of humor, however grimly suggestive it may be of the grinding uncertainties of the portable sawmill operator. Read the letter of a correspondent who was asked to report the cut of his mill:

"January 30, 1919.

The Forrester,
Washington, D. C.

The sequence will show why this supplement to your card of inquiry. . . .

The sawmill, listed to me in your department, is probably one that I sold to Jon. Scogins of Glanzaida, Ala.; Scogins sold to Josep Bailey, of Rosalie, Ala.; Bailey sold to W. J. Tally, of Stevenson, Ala.; Tally sold to Hensley Tinker, of Pisgah, Ala.; Tinker sold to a party of Scottston, Ala.; and the last I heard of this mill it was still selling, and, following the star of empire, westward taking its way.

Another sawmill I owned at Pisgah, Ala., I sold to one Jack Kirby, of Menlo, Ga.; Kirby sold to a party in South Georgia; and the last account I had of this mill it was near the line of Florida, and still selling as rapidly as Iser ever rolled.

Another mill that I owned at Wannville, Ala., I sold to C. M. Coffey, of that place, Coffey sold to a man by the name of Ledbetter, and Ledbetter sold it to a party unknown to me.

Another sawmill that I owned I sold to a Mr. Hall--this mill was at Yucca, Ala., and Mr. Hall told me that it has sold several times since.

I am not writing this letter in a spirit of levity, but to show that the ways of sawmills are almost past finding out and that he that proposes to keep tab on them must go some. I had to buy the most of my mills on debts. I never sawed for the market, but usually carried them to a plantation, and sawed for my own consumption and plantation uses."

Paper Conservation

A decided economy in the use of envelopes was effected in the distribution of the January Field Program. The requisite number of copies needed on the different Forests was sent to the supervisors, as has been the practice, without however including an equal number of envelopes for remailing the Program to the field officers.

This change effects a saving not alone in envelopes but also in time. In Washington it does away with the necessity of counting out the envelopes; in the supervisors' offices it saves the placing of the Program in the individual envelopes, the sealing, and the writing of the address of each field officer.

On the Forests it has become the rather general practice to exercise a close supervision in sending mail to the field men. Instead of sending mail every day, a record of mailing days is maintained, and letters are allowed to accumulate until mailing day. This means one or two envelopes a week instead of six. This is no hardship on the ranger. Instead of getting in each mail 3 or 4 envelopes from the supervisor, he gets one large envelope. Delay in mailing circular letters or other routine papers not requiring immediate action is practiced on many Forests. It is felt that the delay of a few days in getting the Field Program will not lessen its value or cause any great inconvenience to the field officers.

Wooden Culverts and Forest Fires

State Forester Cox, in his report on the recent forest fires in Minnesota, has the following to say about wooden culverts:

"The recent fires have demonstrated the need of eliminating wooden culverts in road construction. They prevented the escape of many settlers by making the roads impassable and later retarded relief work in the outlying districts as well as mapping of the burning areas."

Protection Against Fire

The recently formed "Committee on Cooperation with the National Board of Fire Underwriters" appointed by the Fire Marshals' Association of North America held its first conference in New York a short time ago.

There was considerable discussion over the question of impressing school children with the proper methods of fire prevention.

In cooperation with the U. S. Bureau of Education, a booklet "Safeguarding the Home Against Fire" had been prepared and distributed. This booklet has already gone through four editions and a total of 215,000 copies have been distributed.

Among the resolutions adopted there was one recommending to the various State Departments of Education that they adopt during 1919 a fire prevention educational campaign. If such is done the opportunity should be seized to have something on forest fire protection part of the educational program.

The booklet which is to be used as a manual unfortunately makes no mention of forest fires and their dangers.

Wool Consumed in the United States in 1918

Seven hundred and forty million pounds of wool, grease equivalent, were used by manufacturers in the United States during 1918.

Military needs kept the monthly consumption of wool to an average of 65,500,000 pounds, grease equivlant for the first ten months of 1918, but in November it fell to 47,000,000, and in December to 38,300,000 pounds.

Massachusetts mills used more wool in 1918 than any other four States combined. Next in order came Pennsylvania, Rhode Island, New Jersey, New York, Connecticut, New Hampshire, Ohio, and Maine.

Spruce Production Cutfit to be Sold

Ten million dollars' worth of equipment owned by the U. S. Spruce Production Corporation, at Portland, Ore., has been put up for sale. With the signing of the armistice the demand for airplane spruce no longer exists, and so all operations have ceased.

Much of the equipment which will be put up for sale has never been used because of the abrupt ending of the war. Material of all sorts is available, and the range is from picks and shovels to complete railroads and mills capable of producing stock from the huge tree in the forest to the finished plank ready for shipment to the airplane factory.

Gobs Get Garments

It is marvelous how good news travels. Last year when J. J. Black of the Washington Office enlisted in the Navy he was supplied with a sweater and woolen socks. He was stationed at the Naval Operating Base at Hampton Roads, and when the cold weather came on in the fall he evidently became the envy of a comrade gob for very soon a letter was received by the committee in charge of the knitted garments asking if another sailor could not be supplied. As it was not possible to send any more garments to the men in the forestry regiments and there was still a goodly stock on hand, this sailor got what he asked for. The news spread with great rapidity, and more letters came pouring into the office. So far about sixty men have been supplied, each with a sweater and two pairs of woolen socks.

Washington Notes

With deep regret announcement is made of the death, February 11, of Ernest C. Rogers, who was in Washington on detail from District 1.

R. C. Bryant, who has been engaged in the lumber industry study work of the Forest Service for the last half year, has returned to Yale to resume his duties as Professor of Lumbering.

P. D. Kelleter has been spending a few days in the big towns. He represented the Forest Service at the meeting of the Lumberman's Welfare Committee at New York on Monday, the 10th. On Wednesday, the 12th, he addressed the meeting of the Appalachian Mountain Club at Boston.

R. K. Helphenstine, Jr., has just returned from a week's trip on the inspection of oak at shipyards at Sharptown, Md., Milford, Del., and Morris Heights, New York City. These yards are building harbor tugs for the Emergency Fleet Corporation, and the inspection was made to ascertain to what extent red oak is being used in the construction of these vessels. Mr. Helphenstine was accompanied by R. A. Smith, Chief Inspector of Wooden Hulls, Atlantic District, Emergency Fleet Corporation.

A motion picture of the war work of the Forest Products Laboratory at Madison, Wis., was exhibited to members of the Washington Office and their friends at the National Museum auditorium at 4:30 P. M., Tuesday, February 11. The showing of the picture was preceded by a brief talk by Director Winslow.

At the request of the National Research Council, Professor F. H. Newell, of the University of Illinois, is preparing a monograph on water in all its aspects The Forest Service is to supply two chapters, one on the influence of forests upon streamflow and the other on water-power.

J. W. Stokes has been detailed to special work with the Ordnance Department. Mr. Stokes will check up in the eastern states the walnut timber supplies that had been contracted for at the time of the Armistice.

War Savings and Thrift Stamps amounting to $55,836.37 were sold to employees of the Department of Agriculture in Washington through Departmental agencies. This is an average of something over $16 per employee. Sales in the Forest Service amounted to $6,000 or an average of $23 per employee.

Abstracts on forest literature appearing in periodicals will hereafter be furnished to "Botanical Abstracts" by members of the Forest Service engaged in research work. This abstracting is at the present time done for use of the Forest Service. The new arrangement will make the information available for foresters everywhere.

T. W. Norcross is in the West in connection with Forest Service road work. He intends to make the rounds of the Districts.

Acquisition

Approximately 10,233 acres of land in the Southern Appalachians and White Mountains were purchased during the month of January under the Act of March 1, 1911.

Madison Laboratory

Gross sales amounting to $5,000 were made during 1918 by the cooperative store operated by the members of the Laboratory. It is estimated that there was about a 20 per cent saving to the members. Capital is secured from a membership fee of $3 which is returned when the member withdraws. There are no operating expenses; the committee in charge gives its time.

The National Canners' Association, at its recent annual meeting held in Chicago, passed unanimously the following resolution:

> "The Forest Products Laboratory of the United States Forest Service has rendered valuable service to the canned goods trade through its scientific investigations of packing-box construction. It is of the utmost importance to the manufacturers and shippers of this country that the Government should extend and adequately maintain the work of the Forest Products Laboratory."

District 1

Preparations for the fire season are well under way in Missoula if the reorganization of the Athletic Club can be taken as a criterion. The club is limited to 35 members, of which number 22 belong to the Forest Service and 13 are outside. Regular sessions will be held each Wednesday evening.

P. C. Kitchin is back at the old stand at the Savenac Nursery, after a war time detail to the Madison Laboratory.

Influenza is still around, and several members of the District office are absent on account of sickness.

The State Forester of Montana has been instrumental in introducing a new fire law which has been approved by the Forest Service and which provides, in brief, a closed season from June 1 to September 30 for setting brush fires, except under permit from a Forest officer. All Federal and State Forest officers will be authorized to issue permits. There seems to be a reasonably good chance that the bill will pass. If this becomes a law the big job of the Forest Service will be to work with the ranchers and assist them in burning during safe periods, and to attempt in every way to secure their cooperation rather than their antagonism.

On January 28 Mr. Rutledge conferred with the lumbermen in Spokane representing the North Idaho Forestry Association, with reference to the proposed forest legislation in Idaho. Homer E. Fenn, of Ogden, was present, and also Roscoe Haines of the St. Joe. A committee was appointed to meet with the legislature at Boise, in an attempt to secure legislation which will put forestry in Idaho on a nonpolitical basis.

On Tuesday, January 28, members of the Service rifle club went to work on the club room in the basement of The Smoke House with such good will that before the day was done everything was in order. The room is now ready for use at any tim time, but regulation rifles have not yet been received from the War Department. The club will make an effort to have 22-caliber rifles on hand for the use of any who may not be fortunate enough to possess a gun. Ammunition will be sold by the club at wholesale prices until the supply to be issued by the Government arrives, and even after that, for, since 200 rounds per man per year will be the limit furnished, it may be necessary for members to supplement the allowance.

It is now officially announced that the Laboratory of Forest Pathology, of which Dr. Weir is head, is shortly to be moved to Spokane, Washington, and rooms have been engaged in the Columbia Building, over the Hippodrome Theatre. The object of this change is primarily to establish the Laboratory more centrally, but also to bring it nearer to the field force of the white pine forests, so that rangers and other Forest officers may have an opportunity of informing themselves in regard to the various diseases affecting forest trees. Dr. Weir intends to keep "open house" in the Laboratory for all members of the Forest Service who may be in Spokane at any time. Packing is now well under way and it is expected that the move will be made in a very few weeks.

Lenthal Wyman, Forest Examiner in the District Office, has tendered his resignation, effective January 31. Mr. Wyman has accepted a position as Assistant State Forester of Texas and instructor of forestry in the State school of forestry at College Station, and will leave Missoula this week for the South.

Harold Townsend was reinstated in the Forest Service on January 27, and has returned to duty in the Office of Engineering, after serving for seven months in the 472nd Engineers, engaged in topographic work.

W. M. Nagel, who is now stationed at Fort Barrancas, Fla., hopes to return to Missoula in a few weeks, and will resume his work in "Planting."

Supervisor Fullaway, of the Nesperce, and Witham, of the Sioux-Custer, were in Missoula last week to discuss the five-year grazing lease.

District 2

House Bill No. 27, pending in the Colorado Legislature, provides that it shall be lawful for any person or persons, without license or permission from any one, to kill or destroy beaver which interfere with the maintenance or operation of any reservoir, dam, inlet, outlet, or flume for use for irrigation or domestic purposes, or when they interfere with the cultivation of land or crops thereon, or when they may injure fruit trees, timber, or shrubbery.

This bill, if passed, will remove all restraint on the killing of beaver. There has been considerable resentment on the part of stockmen against the feature in the present law making it necessary to get permission from the State Game Department to destroy beaver doing any damage. It will also remove any protection of the beaver in the National Forests.

Authorization has been given the District to employ a landscape architect who will serve as a Recreation Engineer. His duties will consist for the present in the preparation of plans for (1) general sanitation work in the Forests with special reference to ranger stations; (2) simple highway landscape improvement; (3) improving the setting of our ranger stations. As the season makes it possible he will visit the field and direct the work. Much will be required of him in connection with the improvement of municipal camp grounds and the more important summer home sites. It has for a long time been considered important that the Forest Service have an employee with qualifications of this Character, and this is the first appointment to be made.

First Lieutenant Fred D. Mendenhall has been awarded the Distinguished Service Cross for extraordinary heroism in action near Cunel, France, on October 20. The citation reads as follows: "Although his platoon was constantly under heavy shell and machine gun fire, Lieut. Mendenhall courageously directed the wiring of an extreme northern outpost line of infantry on 20th October, 1918. On the night of 10th November, 1918, he skilfully directed the construction of a trestle bridge over the Loison River. So close to the enemy was his platoon that it was necessary to lash the bridge together, because the hammering of nails drew instant machine gun fire from the enemy." Lieut. Mendenhall was hydro-electrical engineer in District 2 at the time he entered the military service.

Three more men have returned from military duty and resumed their duties as Forest officers: Charles L. Cecil, formerly supervisor of the Superior, goes to the Medicine Bow in a similar capacity. John Burgess is again surveyor-draftsman, and H. H. Hedge is again topographic draftsman.

Many of the animals exhibited at the National Western Stock Show had been grazed on the National Forests of District 2, and signs setting forth this fact were placed over the pens. First prize was awarded to M. E. Rhinesmith, who exhibited 15 head of 3-year-old graded Hereford steers. These animals were grazed on the Medicine Bow Forest until the year 1918, when they were removed for special conditioning.

District 3

C. A. Long was present at the road conference held at Phoenix with the Arizona Highway Commission. The Governor attended, and also representatives from each county of the State.

Several copies of "Contact," published by the 639th Aero Squadron, have been sent to the District office by Lieut. Emanuel Fritz. Each issue contains a brief message from Fritz to the men of his command.

Bids for the cooperative part of the Clifton-Springerville road are being advertised by the Board of Supervisors for Greenlee County. The Government forms of proposal and contract have been adopted by the county board.

M. R. Gonzales, county agent, and Forest Ranger C. R. C. Reindorp have been conducting meetings in Pecos, San Jose, Ribera, Gascon, and Rociada, to stimulate interest in the use of the National Forests for grazing. They have listed all available land in an effort to obtain better use and allow more small growers to use a portion of these lands.

A memorial tablet has been placed at the station formerly occupied by Ranger H. H. Sage, by the personnel of the Coronado Forest. It consists of a copper shield, similar in shape to the ranger badge, 6 inches by 6 inches, bearing a small pine tree in each of its upper corners, and the wording "In Memory of Harley H. Sage Who Died in the Service of His Country, Nov. 13, 1918." This tablet is mounted on a similarly shaped oak shield 12 inches by 12 inches.

Lieut. Harry W. Ulmo, formerly Forest Ranger on the Coconino and at present supply officer of the 11th Aero Squadron, expects to return to this country sometime in February. Lieut. Ulmo writes that his squadron operated with four others on the front for some time as the only American day bombers in France.

The question of "What to do with the pig," which was raised several years ago in the ranger examination is still receiving consideration. Here is the experience a ranger in District 3 had recently:

Permittee to ranger:

"Wish you would go to __________ and get the best hat he has got. If he has not a good one have him order one and send the bill to me. This will be your Christmas present from me."

Ranger to permittee:

"The fact that for official reasons I can not accept your present does not lessen my appreciation of your friendship in the past nor the pleasure of knowing you as a friend in the present and the future."

Ranger Calvin L. Warnock of the Gila recently addressed the three highest grades of the Mogollon Public Schools on Forest Service work, laying particular emphasis on fire prevention and suppression.

Thorwald S. Hansen, recently discharged from the army and subsequently restored to the Service rolls as Forest examiner, with assignment to the Fort Valley Experiment Station, resigned from the Forest Service on January 31.

District 5

"Allow me," says Lumberman Orr, as he hands what looks like a big edition of a calling card to all Plumas sale area brush pilers--but brush-piling instructions, not Orr's name and address, are on the card.

Timber sale costs have dropped from .94 per M in 1909 to .20 per M in 1918 on some of the more important Forests. The decrease is due largely to the heavy increase in the volume of business, although more efficient and systematic methods have helped.

Damages amounting to $354.05 for a 1917 "donkey" fire on a timber sale area have just been collected. The sum includes payment for 82 acres of young growth at $2.13 per acre, as well as for 105 M feet of merchantable timber. The fire could have been put out by one of the "donkey" crew in a few minutes after it first started.

A conference on fire law enforcement work is scheduled for the week March 3 to 8 at San Francisco. As a means of carrying out the State-wide campaign, ten county representatives--men who are to be county fire wardens for the coming season--have, through the State Forester, been invited to attend this meeting at county expense. L. A. Barrett is now in charge of this work in the District office.

"Bud" Simmons has just plead guilty in the Federal Court to setting a fire on the California Forest. This fire was discovered by the lookout at 4 a.m. on July 4 last. The combined law enforcement and fire suppression forces (five men) reached the scene at 8.30 a. m. on the same date, and each squad went about its own separate job.

The fire was declared out, officially, at 10 a. m. on July 5, but the investigation took slightly longer. Peculiarly shaped horse tracks again figured prominently, and a sweaty saddle blanket and a sack which had been used to wash off the horse, formed two of the strongest links in the evidence.

Bud's sentence was only for one month, but he had already been held in jail for six months because, for one reason or another, postponement of the trial had been frequent. He finally decided to plead guilty.

District 6

Piling 90 to 130 feet in length is being logged on the Snoqualmie by the Dicky Pole Company with an automobile logging truck. The piles are yarded to the truck road by donkey where they are loaded on the trunk, butts first and tops dragging. The truck hauls the piles to the railroad, a distance of three-quarters of a mile, three piles to a load. The material is shipped to Alaska and used in the construction of fish traps.

Arrangements have been made in this office to reserve the hours between 8:45 and 10:30 A. M. and 12:45 and 2 P. M. for uninterrupted work, telephone calls being permissible in emergency cases only.

For the purpose of avoiding congestion in Supervisors' offices and securing greater punctuality and greater completeness and accuracy in the matter of reports, it is planned to keep a chronological record of reports asked for and to arrange dates so as to avoid the falling due on the same date of two or more reports from the same Supervisor.

The bulletin board in the District Office shows a receipt for $47.98, signed by the treasurer of the Portland Chapter of the American Red Cross. This money represents the proceeds from the sale, by the District Six Forest Service Women's Relief Committee, Mrs. Gertrude L. Whiting, Chairman, of socks and sweaters left from the supply knit for soldiers by District 6 women. Crater and Chelan Forests stand first and second in the amount of knitting credited to them. In all there were knit 20 pairs of wristlets, 233 pairs of socks, and 284 sweaters.

According to the spruce reconnaissance men, the office work is about 85 per cent done.

R. H. Chapler, Forest Examiner, is in the field with the party which is estimating the cost of cleaning up debris following the spruce-production operations. The party is made up of a representative from each of the following: Spruce Production Corporation, State Forester's Office, Oregon Forest Fire Association, District 6 office, and owners of the land.

Mrs. Francis Wilson has resigned from the Forest Service and taken the position of Executive Secretary at the Hot Lake Sanitarium, near La Grande, Oregon.

Supervisor Norman F. Jacobson, of the Deschutes, is in the District Office in connection with fire protection and grazing matters.

Walter H. Leve, Forest Examiner, is back in the District 6 office, Section of Planting. He was recently discharged from the Spruce Production Division, Air Service, U. S. A. He was stationed at Vancouver Barracks, Washington, where he was connected with the inspection department of the spruce cut-up plant.

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WEEKLY BULLETIN

Forest Service - Washington Office

(Not for publication)

February 17, 1919.

More Boys Home

On February 10 Colonel Graves received a telegram from Major Barns announcing the arrival in Hoboken of the 12th Battalion of the 20th Engineers and the 32d Company of the 11th Battalion. The eighteen officers and 850 men went to Camp Mills for demobilization. These battalions were formerly the first and second battalions of the 10th Engineers.

The Photograph Collection

More than 38,000 mounted photographs on forestry and kindred subjects are on file in the Washington Office. In addition to the negatives for these photographs, about 100,000 additional negatives are on hand and available for use in making photographic prints.

The photograph collection forms an important part of the reference facilities of the Forest Service and is maintained to furnish a pictorial record of forestry, not alone for use by members of the Service, but as a valuable source of illustrative material for newspapers and magazines. There are constant calls made on the collection for photographs, and under existing regulations it is possible in most instances to supply prints.

Prints are supplied for use in connection with news stories that deal in some way with the subject of forestry or the work of the Forest Service. It is not planned to have the collection serve a general demand, although it does cover a wide range of subjects.

The success and life of the collection is dependent on the assistance given by field men in supplying negatives of timely subjects. Chances for good, striking photographs are at hand nearly every day. The important things are to have the camera along at all times and to become thoroughly familiar with its operation.

The value of a photograph lies in its ability to tell a story clearly and quickly. Life and action are necessary to make it worth while.

Next to finding in the field a good subject for a photograph, the development of the negative is important. The photographic laboratory of the Forest Service in Washington was never in better position to handle films and plates sent in from the field than at the present time. The development of negatives and the making of prints are done by experts who are not only interested in getting the best out of the negatives, but who also have an understanding of the subject of forestry. Commercial photographers in most instances fail to get the best out of the pictures.

Cooperation of field men therefore is desired, first, in constantly carrying a camera in the field; next, in taking many pictures, and lastly, in sending the exposed films or plates to the photographer in Washington for development and printing. If these things are done, the collection will be rejuvenated. Keep it supplied with photographs of current interest and increase the usefulness of the collection for members of the Forest Service and magazines and other periodicals publishing items relating to the Forest Service or general forestry.

Railroad Tie Producers Organize

A national organization of the producers of railroad ties from all over the timber states was perfected at the recent meeting in St. Louis.

The purposes of the new association as stated in the constitution and by-laws are:

"The association is organized, not for pecuniary profit in any form, but for benevolent, scientific, and educational purposes; to promote business between members of the association, between its members and others engaged in the railroad tie business and with the public at large, and also with those who may subsequently become members thereof; to advance, promote and extend the commercial and manufacturing interests of the various communities where railroad ties are produced; to inculcate just and equitable principles of trade and to improve business standards in their relation to the civic life of the communities; to establish and main tain the utmost uniformity and fairness in the commercial usages; to acquire, preserve and disseminate valuable business information; to promote friendly intercourse among its members and other tie producers and other commercial and manufacturing interests of the communities, and to increase their facilities for an interchange of ideas and also for the purpose of cooperating with other organizations upon important matters affecting the commercial, manufacturing as well as civic interests of various communities, the various states and the nation; to avoid and amicably adjust, as far as practicable, all controversies and misunderstandings arising between individuals engaged in the trade and their customers; and to protect and promote generally the interests of railroad tie production and those engaged therein; and to do any and all things which may be necessary and proper to carry into effect the said objects and purposes; and to facilitate in every proper way the transactions of all legitimate business between members and between them and others."

The headquarters of the association will be at St. Louis.

Will the Wooden Tie Go?

The following resolution has been introduced in the House and was referred to the Committee on Interstate and Foreign Commerce:

"WHEREAS, It is claimed that the present methods of purchasing railroad ties, switch ties, car material, and crossing planks are unsatisfactory and resulting in a shortage in ties alone of fifty to sixty million, with a consequent inability for the railroads' tracks to be kept in condition consistent with the safety of the general public; and

"WHEREAS, The recent great war will result in an enormous demand for railroad ties, and so forth, to be added to our need in this country, further depleting our forests, thousands of acres having been already stripped of much of its best timber, including much of the hardwood; and

"WHEREAS, It is claimed that there are several good substitutes now to be obtained for the manufacture of railroad ties to take the place of those now made of timber, said substitutes now to be obtained for the manufacture of railroad ties to take the place of those now made of timber, said substitutes being made either of metal and wood (the wood being scrap or waste ends of timber), metal, or metal and concrete; and

"WHEREAS, It is further claimed that the substitutes will result not only in the saving of the forests of the country, but also that the substitutes, being so far superior to timber for railroad ties, and so forth, that many accidents now common on account of worn and defective railroad ties, and so forth, will be prevented and thus result in the saving of many lives and much railroad rolling stock, and so forth; therefore be it

"RESOLVED, That the Interstate Commerce Commission is hereby requested to make an investigation of all matters, facts, and circumstances set forth in the foregoing preamble, and to make report to the House of the evidence, its findings, and any recommendations which may seem to it appropriate."

Surplus Equipment and Supplies

The sale of surplus equipment and supplies is restricted to employees of the War Department and no provision exists at the present time whereby Forest officers can purchase such articles as shoes, socks, underwear, khaki breeches, leggings, flannel shirts, reefers, gloves, etc. Inquiry had been made by the Forest Service some time ago as to the possibility of getting hold of supplies. Promise was made that, should the necessary authorization be obtained at a later date, the Forest Service would be informed accordingly.

On a Peace Basis

The Loyal Legion of Loggers and Lumbermen has effected a change from a war to a peace basis. The new constitution and by-laws have been changed to meet the new conditions. The objects of the reconstructed body include the maintenance of a basic eight-hour day, no reduction of the present minimum wages, the development of logged-over lands by bona fide settlers, and the furtherance of recreational and educational features in camps and mills.

The Loyal Legion has also decided to open up free employment offices for members where feasible, and in pursuance of this plan has asked the city council for a permit for the establishment of such an office in Spokane.

Norway To Assist in Restoring French Forests

Norway intends to help out the restoration of the devastated part of France, in the front zone, by planting a belt of Norwegian forest trees. Much enthusiasm has developed for the scheme, and it is intended to begin this spring. It comprises the planting of 250 acres annually for five years, and the money is streaming in to Consul Heiberg, at Christiana. The idea is to send a forestry party of about 50 Norwegians, fully equipped with trees, tools, tents, and stores, so as not to impose the slightest burden on France. The tentative zone for planting the belt of trees is from Adrennes toward the Belgian frontier, behind Arras, where there formerly was fine forest; but action will be taken in accordance with the desires of the French.

Mount Rainier National Park

Protest against the extension of the southern boundary of the Mt. Rainier National Park has been made by the Chehalis Citizens' Club, acting in behalf of the residents of the eastern portion of Lewis County, Washington. A memorial has been addressed to the President, the Secretary of the Interior, and the Secretary of Agriculture, protesting against the proposed extension. It is pointed out that the proposed enlargement would include several hundred million feet of merchantable timber which if left outside the Park would, when released or sold by the Government, become available for taxation.

The area which would be affected by the extension of the Park boundary is at present included in the Rainier National Forest.

Farm Forestry

Farm forestry is to be the feature in some of the agricultural journals during the coming year. The increased interest in this subject has brought about the general acceptance of the term "woodland" or "woods," instead of the original one of "woodlot." "Woodlot" originated in New England, where it is well established, and it is an adequate term as long as it is restricted in its application to conditions similar to those found in New England. In recent years, however, farm forestry has developed rapidly. This is particularly so in the South where the movement is of tremendous importance not only to the farmer but to the whole community. With the growth of the movement it is found that the terms "woodland" and "woods" are more satisfactory and more expressive and avoid the possibility of creating confusion in the minds of the farmer in other sections than New England.

Game Census

All sportsmen in New York will hereafter make an annual return, on a blank specially provided for that purpose, of all game and vermin killed by them during the preceding twelve months. This return is to be made at the time of application for a hunter's license.

The protection of game and its increase is coming to be recognized more and more as an activity that demands firstrate business efficiency, and the more progressive states are entrusting the administration of game affairs to men with business ability. The ideal game commissioner is the man of proved business ability plus a knowledge of sport and a warm sympathy with its ideals.

The census blank is printed on the back of the stub of the license which is retained by the issuing authority, and it must be filled in before another license will be issued. Pennsylvania and Massachusetts have done much pioneer work through their game commissions on the game census problem, but the New York plan seems to promise concrete results along this line. In South Dakota provision for a census of deer killed is obtained by a requirement that the purchaser of a license must make a report as to whether he was successful in killing a deer. Transportation by common carrier is not possible without having a special tag attached, which is furnished at the time the license is purchased.

Wild Life in the Forest Service

Some time ago the suggestion was made to the Forester that the existing filing scheme make provision for a new subdivision, "G-Wild Life." After due and careful consideration of the suggestion, the conclusion was reached that the present designation, "Fish and Game," adequately covers the official activities of the Forest Service.

New Zealand Soldiers on the Land

According to the Annual Report of the Forestry Branch of the Lands and Survey Department for New Zealand, not more than 1,000 soldiers out of the 25,000 who have returned from the front have been located on farms, notwithstanding the fact that 394,219 acres of land had been set aside for this purpose.

The policy of the New Zealand Government is to settle soldiers on lands so as to develop the very large tracts of wild land still to be found in different parts of the dominion.

It is proposed to appropriate $4,866,500 for this purpose, which is to be used partly in taking over large estates and dividing them into small allotments, and partly in making advancements to soldiers in order to give them funds to begin farming.

It is thought that the returned soldiers can not profitably be located on land valued at more than about $65 an acre, and there is plenty of crown land that will become available as soon as railways and proper wagon roads are extended.

National Forest Receipts

A decrease of $206,185.37 is shown in the receipts from the National Forests for the period of July 1 to December 31, 1918, as against the corresponding period of the previous year. The total receipts for the first six months of the current fiscal year amount to $1,111,321.21. The greatest decreases are: Timber sales, $120,527.02; timber settlement, $84,638.28; grazing sheep and goats, $14,557.68; water power, $28,170.77.

District 7 is the only District to show an increase, and this amounts to $14,832.01.

Prospects seem bright for an improvement in receipts for the full fiscal year. Interest in timber sales is on the increase and the grazing fees for the year are yet to be paid.

Minnesota Forestry Association

Adequate State protection of the forests of northern Minnesota was urged in resolutions passed at the recent meeting of the Minnesota Forestry Association. Suggestions were also made that a tax of a quarter of a mill, yielding over $250,000 a year, for forestry and fire protection service be provided.

Memorial and Arbor Day in Ohio

The Ohio Forestry Association has requested the Governor to combine with the annual Arbor Day proclamation the memorial tree planting idea and set aside a combined Arbor Day and Memorial Tree Planting Day. The association favors the plan for making such memorial plantings in the form of groups, groves, or forests. Suggestion was also made that native trees only be used, such as white oak, sugar maple, elm, etc.

The city of Cincinnati has set aside five acres in the city forest at Eden Park to be planted in white oak as a memorial to Cincinnati soldiers who lost their lives.

North Carolina Foresters Meet

At the ninth annual meeting of the North Carolina Forestry Association held recently at Raleigh, it was decided that recommendations should be submitted to the legislature as follows:

1. A classification by the Department of Agriculture in cooperation with the geological board of all lands not now in actual productive use to show the amount of such land suitable only for the growing of forests.
2. Reestablishment by North Carolina of an adequate protective system against fire and other depredations of all lands whereon the growing of forests would represent the highest productive use to which such lands would be put under present economic conditions.
3. State control of the cutting of any trees or timber from any and all forests or reforested lands.
4. Immediate and energetic undertaking to reforest such lands as are not now adequately stocked by forestry growth of suitable quality.

Correspondence Course in Lumber

The correspondence course in lumber and its uses prepared by the school of forestry, University of Idaho, has been very favorably received. The course furnishes information in convenient form regarding the properties of wood and the adaptability of different woods to different uses. The topics treated include the structure of wood, physical properties of wood, standard grades and sizes, structural timbers, seasoning and preservation of wood, lumber prices, lumber production, and the wartime uses of wood.

The course is designed to be of special value to lumber dealers, lumber salesmen, contractors or builders, carpenters, manual training teachers, and others connected with the wood-working industries.

Taxation of Maine Forests

A bill has been introduced in the Maine legislature to place a tax on all trees cut. The tax starts at 1½ per cent and increases to 5 per cent. The act provides that no white pine trees under 12 inches in diameter at one foot from the ground shall be cut from the State forests or from auxiliary State forests except when the cutting is necessary in the clearing of roads or yards during the operation or from localities in which trees are unduly exposed to destruction from wind or too thick for profitable growing. The sum of $5,000 is to be provided for each of the years 1919 and 1920 to carry out the provision of the act.

Proposed Yakima National Park

Senator Jones of Washington introduced a bill in the Senate which proposes the establishment of the Yakima National Park, which aims to include Mount Adams and adjacent territory. The land involved is now part of the Rainier National Forest. The description of the proposed park is as follows: Beginning at the northwest corner of section one, township seven north, range eleven east of the Willamette meridian, running thence north to an intersection with the west boundary of the Yakima Indian Reservation; thence following said boundary line northwesterly to an angle point on Goat Butte; thence northeasterly along said boundary line to an intersection with parallel forty-six degrees seventeen minutes north; thence west along said parallel to an intersection with the west line of Yakima county; thence south along said west line to an intersection with the township line between townships seven and eight north; thence east along said township line to point of beginning.

The bill as introduced contains several interesting and in a measure startling features. Nothing in the act is to modify or affect the mineral land laws now applicable to the lands.

The park is to be established as a game refuge, and no game may be killed without authority from the Secretary of the Interior. Of special interest in this connection is the proviso that prospectors and miners engaged in prospecting or mining in said park may take and kill therein so much game or birds as may be needed for their actual necessities when short of food; but in no case shall animals or birds be killed in said park for sale or removal therefrom or wantonly.

Areas not to exceed 20 acres in extent may be leased for periods not to exceed 20 years whenever such ground is necessary for the erection of establishments for the accommodation of visotors, and mature and dead or down timber may be removed whenever the Secretary may deem it necessary and advisable for the protection and improvement of the park.

Coos Bay Wagon-Road Grant

Congress has passed a bill which revests in the United States the lands granted to the State of Oregon to aid in the construction of a military wagon road from the navigable waters of Coos Bay to Roseburg. Upon the execution of the deed the United States will pay the Southern Oregon Co. the sum of $232,463.07.

The lands are to be classified and placed at the dispostion of citizens of the United States at $2.50 per acre.

Forests in New Zealand

The total output of New Zealand r lumber for 1918 is estimated to have been 247,980,000 superficial feet, being 104,520,000 feet less than for the previous year. Slackness in the building trade, scarcity of labor, shortage of tonnage for export, and other war conditions have all had an influence in lessening production.

The total export of mature timber totaled 70,747,737 superficial feet, which is 6,768,119 feet less than for the previous year. On account of the war it was impossible for Australia to get her ordinary supplies of softwoods from America and the Baltic and there was a keen demand for New Zealand softwoods. White pine and hauri are the chief timbers exported, but the export of rimu is increasing.

Timber, excluding laths, rails, post, and shingles, to the amount of 12,864,363 superficial feet, was imported; this included 3,171,473 superficial feet of Oregon pine (Douglas fir).

The revenue received during the year as royalties and rents from State forests was more than 10,536 pounds; from licenses and sales of timber on national-endowment lands it was 13,531 pounds.

The revenue from timber licenses and sales of timber on crown lands was 10,063 pounds.

Washington Notes

The Washington Section of the Society of American Foresters at its meeting last week devoted the evening to a consideration of southern forestry problems. Papers were presented by Messrs. Austin Cary, W. R. Mattoon, and J. G. Peters.

The next meeting of the section will be held on ~~Thursday~~ Wednesday, February 26. The subject for discussion will be "The Application of the Principles of Plant Succession to Forest Management in relation to (a) Range Vegetation and (b) Forest Regeneration." Messrs. A. W. Sampson and G. A. Pearson will present papers and lead the discussion.

A Valentine Dance was given by members of the Washington Office last week.

Old Forest Service publications were returned to Washington from the field as follows:

Chalis National Forest	107
Crater " "	205
District Forester, D-5	299
Inyo National Forest	41
Okahogan " "	21
Wallowa " "	30

Capt. Ernest T. F. Wohlenberg and Lieut. James H. Billingslea, Jr., spent a large part of the past week in Washington and had much to say of their experiences. After a short vacation they expect to resume their duties in District 3.

Editor Herbert A. Smith is back in Washington after a five-weeks western trip which included stops at Denver, Ogden, San Francisco, Albuquerque, and Madison.

District 1

The compilation of the Supervisors' Annual Fire Reports for the year 1918 shows the following:

Class A - 604
" B - 332
" C1- 138
" C2- 61
" C3- 39
Total . . . 1,174

The responsibility for these fires is placed as follows: Railroad, 166; lightning, 569; incendiary, 19; brush-burning, 136; campers, 170; lumbering, 7; unknown, 86; miscellaneous, 21.

A total of 56,921 acres in the Forests was burned over. Of this amount 44,408 acres were National Forest lands. The damage on National Forest lands totaled $112,646.70, and on private lands, $43,461.

The total cost of fighting fires was $396,861.88, of which amount $205,769.22 was for temporary labor.

The total number of fires in 1918 was exceeded in 1914, 1910, 1917, and 1909 in the order named. Only in 1917 and 1914 did the Class A fires make up so small a percentage of the total. The percentage of Class C fires was greater in 1910, 1911 and 1917. In 1915 and 1914 lightning caused a greater number of fires (722 and 714 respectively) but only in 1915 and 1916 was so large a percentage of the total number of fires caused in this way.

The area of National Forest lands burned over was exceeded in 1910 (2,595,635 acres), 1917 (135,148 acres), 1914 (99,727 acres) and 1908 (51,260 acres). The damage on National Forest lands was exceeded in 1910 ($21,358,421), 1917 ($457,748), and 1914 ($225,838). The costs of fire fighting were exceeded in 1910 ($795,282), 1917 ($650,291), and 1914 ($449,935.)

The largest number of fires during any 10-day period during the season was recorded between July 10 and 20, when 264 fires were reported. Up to July 20 a total of 677 fires was reported. In the five-year period, 1914-1918 inclusive, the nearest approach was made to this record in 1917 when 208 fires had been reported up to July 20.

The new Forest Service bridge on the Coeur d'Alene River withstood successfully an eight-foot stage of water which came down the North Fork. The bridge was damaged in a single place, one log of the pier being knocked out at one end. This is, with one exception, the highest stage of water recorded for the river.

The stock of white pine seed in this District is exhausted and it will be necessary to gather not less than 400 pounds next fall. The District Forester announces that this amount must be collected and that excuses will not go.

District 2

District Forester Riley attended the Supervisors' Meeting of District 1, held at Missoula, and Assistant District Forester Morrell attended the meeting of the Supervisors of District 3 in Albuquerque, N. M.

Fish planting work on the National Forests in the District during the season of 1918 shows a total of 1,328,500 fry received from the Federal and 3,555,000 from the State hatcheries. Requisitions from Federal and State hatcheries were 2,002,000 and 2,010,000 respectively.

Captain A. M. Cook gave a talk last week to the boys of the Employed Boys Club of the Y. M. C. A. on "Forestry as a Vocation."

District 3

Engelmann spruce and Douglas fir can be successfully planted on areas occupied by aspen, according to the summary of results obtained at the Gallinas Nursery by Forest Examiner Krauch. Poorer results were obtained when the planting was done on areas covered with down timber without any aspen growth. The need for protection by shade from drying winds and too intense sunlight is also shown by damage in the seed and transplant beds at the nursery. This is particularly so with Douglas fir.

Winter killing of Engelmann spruce and Douglas fir in the nursery is reduced by applying a protective mulch and shade in fall and preventing an excessive accumulation of snow. Results also show that, when the stock is old enough for field planting the following spring, winter protection is best afforded by heeling in late in the fall, providing a protective mulch and shade and preventing the accumulation of excessive snow. This retards the spring growth, which is a decided advantage when the planting is done later.

Confirmation of previous conclusions of the superiority of spring planting over fall planting was obtained from this year's experiments.

Fall-sown seed in the nursery gives larger seedlings, but the most reliable results as to stand are obtained from June-sown seeds. At the same time density in broadcasted seedbeds, exceeding 100 square feet or somewhat less in drilled beds, must be guarded against. Douglas fir and Engelmann spruce stock for field planting should be at least six inches high in order to prevent damage from being covered by aspen leaves. Also each plant should have several good lateral shoots, so that the leader can be readily replaced if killed. The root development should be in proportion to the tops, with depth as well as lateral development, in order to reach moisture in the lower soil strata.

Bids for the construction of the cooperative portion of the Clifton-Springerville Road in Greenlee County will be opened on February 24 by the Board of County Supervisors. This action seems to indicate that the Greenlee authorities are anxious to push the construction work.

A. F. Schaefer, formerly of the Coconino, has been promoted to a second lieutenancy in the 20th Engineers.

District 5

With deep regret announcement is made of the death of Forest Ranger Charles O. Leonard of the Modoc, on January 27, 1919.

District 6

Advertisement has begun for 1,690,000 board feet of Douglas fir and western red cedar and 990,000 board feet of western hemlock, all fire-killed timber on the Santiam, near Detroit, Oregon. The minimum price that will be considered is 75 cents per M for fir and cedar and 35 cents for western hemlock. This fire-killed timber will deteriorate in a few years and should be logged as soon as possible to prevent loss.

Assistant Chief Engineer T. W. Norcross is spending the week in the Portland office, going over road matters with Mr. Cecil and Mr. Dater.

Six members of the Washington Woolgrowers' Association met with the United States Railroad Commission in Portland, February 6, and submitted a brief asking for a readjustment of shipping rates for sheep to and from winter and summer ranges. It is intimated by the Railroad Commission that there will be a general readjustment of rates, with a reduction in charges for long hauls and a slight increase for short hauls. This will affect Oregon, Washington, northern Idaho, and western Montana. The benefits of these rates are to apply only to sheep being shipped to and from summer ranges, and not to commercial shipments. It is believed that this readjustment will be of special benefit to the National Forests. It will be possible to ship sheep to ranges not now used because of excessive shipping charges.

Forest Examiner W. J. Sproat, of the Deschutes, is in the District Office for a month's detail.

Rangers Colter and Will, of the Columbia, and Wiesendanger and Brown, of the Oregon, have opened a sign factory in the basement of the Post Office Building, where they are preparing about seven hundred trail signs for posting on the Oregon and Columbia Forests. Spruce lumber from the Vancouver cut-up plant is being used for these signs.

N. L. Cary and Mont V. Livingston have been discharged from the Spruce Production Division and have resumed their former positions as Forest Assistant and Forest Clerk respectively. Cary is at present in the District Office and Livingston clerk on the Oregon. Robert H. Harper has also obtained his discharge and returned to his position as ranger on the Wallowa.

A committee composed of Miss Strauss, Miss Wertz, Mrs. Whiting, and Messrs. Merritt and Jackson, in charge of contributions to the Forest Service War Relief Association, has completed its work and made a final report of moneys received and paid out for the eleven months that the Association was in existence. This committee has handled $811.43, which has been used in the following manner:, Armenian Relief, $40; Salvation Army, $32.50; Red Cross Drive, $232.50; United War Work Campaign, $427.30; Red Cross Roll Call, $70. The balance on hand ($9.13) was turned over to the Red Cross.

C. M. Allen, Telephone Engineer, is on the Siskiyou, going over telephone problems with Supervisor MacDuff and helping him in making extensive repairs on the Rogue River Trail bridge.

District 7

Fourteen elk were placed on the Natural Bridge National Forest, near Arcadia, Va., in 1917, by the State Fish and Game Commissioner, through the efforts of the Sportsmen's Association of Southwest Virginia.

Eighteen elk, including six young ones, have been reported to have been seen near Arcadia, Va.; two elk were reported near Arcadia and one elk about twenty miles to the west. Damage to crops has been reported in only one instance and that was the eating of clover in an unfenced field near the edge of the Forest.

Captain Inman F. Eldredge, formerly Supervisor of the Florida Forest and later a member of the 10th Engineers (Forestry), has arrived from France and was a visitor at the District Office this week, where he received a warm welcome from his many friends.

Captain Eldredge was in charge of the First Battalion of the 10th Engineers which left Brest, France, on the Battleship New Jersey on January 14. He reports a very pleasant voyage which included a stop at the Azores. The New Jersey landed at Newport News, Virginia, on February 1. There the outfit was broken up and sent to the various demobilization camps. All of the men were glad to get home and were anxious to resume their work in the sawmills and forests. The Battalion is very proud of its record.

The original Commander of the Battalion, Major Benedict, is now a Colonel. He had full charge of the work done by the Forestry Engineers in the south of France, which has produced the major portion of the timber used by the American Army. Captain Eldredge reports that Col. Benedict has made a great reputation for himself in the organization and administration of this work. The men in the Battalion are very proud of his record, since he is one of the most popular officers in the organization. Col. Benedict elected to remain in France for six months longer to close up the work there.

While homeward bound, the First Battalion of the 10th Engineers lost two men from the effects of the flu.

Captain Eldredge will take two weeks leave and then return to his old work on the Florida Forest and to the feeding of his family, which, by the way, has one extra member whom he has never seen, viz., Miss Anne Frances Eldredge, now about a year old.

Supervisor Verne Rhoades, who has been on detail to the District Office since the first of January, left Washington last week. Before returning to the Pisgah Forest, Mr. Rhoades will visit the Shenandoah and the Natural Bridge Forests to look over timber sales. Supervisor Dieffenbach, who has been in charge of the Forest will return to Washington in several months after completing some special work.

WEEKLY BULLETIN

Forest Service - Washington Office

(Not for publication)

February 24, 1919.

The Need of Private Forestry

The importance of private forests is evident from the fact that 97 per cent of the lumber and other wood products used in the United States is obtained from private forests. Private owners own four-fifths of the standing timber, and it is the best and most accessible timber. Practically the entire supply of certain important commercial species is in private ownership. If the war emergency had come 15 years later, we should have had great difficulty in obtaining even the lumber needed for general construction without great sacrifice in time, cost, and crowding of the railroads.

Many persons believe that we do not need to concern ourselves regarding forests because there are still large quantities of timber left in the far West. According to the leaders of the Southern Pine Lumber industry the original supplies of pine in the South will be exhausted in 10 years, and within 5 years not less than 3,000 mills will go out of existence. This means that the competitive influence of southern pine in many markets will be withdrawn. Already there is an acute problem of supplies for paper mills and for other industries in the East which use specialized material. Pacific Coast timber is already entering the eastern markets. This means that the price of home-produced timber has risen to a point where it is possible to ship lumber 3,000 miles in competition with it. The Lake States, which a few years ago were the greatest producers of lumber in the country, are today paying freight bills of about six million dollars a year to bring in wood materials from outside sources. Our country is progressively destroying its forests.

The consequences of the destructive processes now very general are very far-reaching. The exhaustion of the forest is followed by the closing of industries, the steady increase of waste lands, the abandonment of farms that depend for their market on the lumber communities, and the impoverishment of many regions. No section of the country can afford to have a large part of its land an unproductive waste with the loss of taxable values, the loss of industries and of the population that would be supported if these lands were productive. No section of the country can afford to be dependent for its supplies of wood products on another section from one to three thousand miles away.

A large extension of our public forests is an essential part of any national program of forestry, but it is only a part, and the future industrial, economic, and social interests related to forests will have to be met in considerable part from private lands. This cannot be done unless the private forest lands are protected from fire and are handled constructively with a view to continued tree growth.

To an owner who intends to hold his land as an investment, forestry is just as essential as good agriculture is to a farmer. Most timberlands have been purchased, not as a permanent investment, but with a view of exploiting everything on them which can be used without any reference whatever to the condition in which the lands are left. Timberland owners have not recognized any obligation to expend effort to prevent the property from becoming a source of injury to the community. It is the speculative character of ownership and the pressure to realize on the speculation that explains the reluctance of timberland owners to handle their lands productively. The result is that little progress has been made in forestry on private lands.

Even in organized fire protection the chief effort is confined to the stands of merchantable timber, and the cut-over lands and young growth are protected only so far as is necessary to safeguard the merchantable stands.

The character of the forestry problem is such as to require the participation and direction of the public. Today there is indifference on the part of the public as well as the private owner. We are not going to meet this situation until the public takes hold of it.

There is involved strong prohibitive action on the part of the public to stop the burning and other destructive methods.

First of all, there should be compulsory fire protection, and this should apply to cut-over lands as well as to standing timber. In the main our laws are not drastic enough in this matter. They do not provide adequate penalties for noncompliance, and few States afford effective machinery to carry out the laws. It is necessary in order to secure effective results that the State direct the work of fire protection. The public should contribute liberally, but the owner should feel the direct responsibility for protecting his land under a coordinated State system.

Fire protection is not the only responsibility on the part of the timberland owner. The way he cuts his timber determines whether the land in the future for one or several tree generations will be productive or unproductive. The public should prohibit destructive methods of cutting that would result in injury to the communities and the public at large. It should take liberal action to aid owners in bringing into practice such methods of forestry as may be necessary to prevent such injury. The public should provide a sane system of taxation; it should cooperate in such economic problems as overproduction of lumber, problems of labor, technical questions relating to methods of forestry, and a variety of other economic, industrial, and technical matters that are encountered in carrying out in practice a constructive program of forestry. The development of a broad program of forestry that considers all of our forests and their problems is essential. Such a program must include not only the public action necessary to aid and promote forestry, but also a mandatory requirement of fire protection and regulated cutting of timber so that a regrowth on private lands chiefly suited to forests will be insured.

H. S. GRAVES.

Wooden Box Wins

The Interstate Commerce Commission recently handed down a decision of great interest to manufacturers of wooden containers.

An effort was made by the manufacturers of a patented many-trip collapsible steel container to secure preferential rates. The Commission declined to make any concessions for the steel box, holding that the users of the steel box are subject to the same treatment from a freight-rate standpoint as the shippers of containers made of wood.

Several years ago a company devised a steel collapsible packing case. In endeavoring to market it the manufacturers encountered several obstacles. The case was so heavy that the user would be forced to pay greatly increased freight charges both for the initial movement of the loaded case and the return of the empty collapsed case. Moreover, the initial cost of manufacture was from $10 to $20 per case.

An advertising campaign was instituted to get the shippers interested and an effort was made to have the railroads insist on the use of the steel box on the theory that it would eliminate millions of dollars in loss and damage claims.

In an effort to establish the use of this steel container a complaint was filed against the railroads before the Interstate Commerce Commission, demanding that because of the peculiar virtues of the steel box the carriers be ordered to transport commodities loaded in that box at the net weight of the contents, and that the box when made empty at destination be returned to the original point of shipment without freight charges.

In dismissing the complaint the Commission very thoroughly considered the question of containers, particularly the need of standardized containers, and the question of loss and damage through inadequate containers, but refused to make special concessions to the users of the collapsible containers as against wooden containers.

New England Forestry Congress

Under the auspices of the Boston Chamber of Commerce and the Massachusetts Forestry Association, a forestry congress will be held at Boston on February 24 and 25. Colonel Graves will speak on "The Need of Private Forestry" at the banquet to be held Monday evening.

The purpose of this congress, as set forth on the program, is to arouse the business men of New England to the need of practical forestry and by means of experts in many lines to show just how forestry affects the industries and the resources of the country.

Quebec Will Use Airplanes

The Quebec Government has voted a subsidy to the St. Maurice Forest Protective Association to make possible the patrol of its forests with airplanes.

Up to 1904 the Quebec Government took care of fire protection in the Province, but in that year some of the lumber companies notified the Government that they would be responsible for the protection of their forests and formed an association for that purpose. These associations have grown in number and influence until at present there are four big associations. Altogether 90 per cent of the companies have joined one or other of the four.

Lumber Purchases During the War

The Lumber Section, War Industries Board, purchased 2,880,000,000 feet of lumber for war uses, enough to fill 144,000 cars. Purchases of other forest products bring the total to 187,316 cars.

Idaho Sells Timber

Plans are under way by the State Land Board of Idaho to sell State timber in the vicinity of Payette Lake. By the present plan there will be a reduction of $100 on each 40-acre tract under the original appraisement, in consideration of an agreement of the bidders to burn all waste. Selection of the timber will be made by a representative of the University of Idaho forestry division.

Wood Comes High in Moscow

Wood is very scarce in Moscow, according to the Official Bulletin. The price for wood ranges from 800 to 1,000 rubles per carriage load, (a ruble is normally worth about 50 cents), and the people are obliged to work in their overcoats, the temperature rarely being above 5° C. (41° F.) Street car traffic is maintained only from 8 o'clock in the morning to 8 o'clock in the evening, except on Fridays and Sundays, when all traffic is at a standstill.

Road Work in 1919

Expenditures for highway work in the United States this year are likely to amount to half a billion dollars or even more, according to a statement made today by officials of the Bureau of Public Roads. On reports received from State highway departments, the bureau estimates the expenditures for roads and bridges at $385,000,000, or $110,000,000 more than the average expenditures for 1916 and 1917. This estimate does not include, however, the additional Federal funds which will be available if the amendment to the Post Office appropriation bill, making $50,000,000 available immediately, and $75,000,000 on July 1, is enacted into law.

Estimated work under control of the State highway departments includes $45,000,000 for the construction of 5,000 miles of road now under contract, $30,000,000 for 4,000 miles of construction ready for contract, $100,000,000 for 16,000 miles of contemplated construction, and $60,000,000 for maintenance of 200,000 miles. Expenditures of counties, townships, and local road districts are estimated at $100,000,000 for the construction of 15,000 miles and $50,000,000 for maintenance of 100,000 miles.

American Society of Mammalogists

A movement is under way in Washington to organize a society for the promotion of the interests and study of mammalogy. It is intended that the society shall devote itself to the subject in a broad way, including studies of habits, life histories, evolution, ecology, and other phases. Plans call for the publication of a journal in which both popular and technical matter shall be presented.

Should any member of the Forest Service be interested in the proposed society, further information may be obtained on application to the secretary of the Society of American Foresters.

An Ecological Forester

Barrington Moore, formerly of the Forest Service, has been elected president of the Ecological Society of America. The Society, which includes the most distinguished scientific workers in the field of ecology and to which many foresters belong, has thus recognized the work of the foresters in its own field.

Examination for Forest Assistant

An examination for Forest Assistant will be held on March 26 and 27, as announced by the Civil Service Commission.

Climate and Forest Fires

"Climate and Forest Fires in Northern California" is the subject of a report just made by S. B. Show. The investigation contains the first results of an inquiry into the relation between the effect of climate upon forest fires and opens a new vista into the subject.

New Publication

"What the National Forests Mean to the Water User" has just made its appearance. This publication is of particular interest on account of its general excellent makeup both typographically and pictorially. It is also very opportune and has special significance in view of current events.

Nevada Forest Area Decreased

The President, on January 25, 1919, signed a proclamation eliminating 63,547 acres from the Nevada Forest. The lands affected are scattered along the present boundaries of the Forest and consist of strips varying from one-half to one and one-half miles in width. The action is essentially a trimming down of an impracticable boundary and is based on recommendations as a result of the complete land classification of the Nevada Forest.

Exchange Bill for Lands on the Cache Forest

Congress has taken favorable action on a bill providing for the exchange of certain private lands within the Cache Forest for other lands of equal value. The Forest Service is in favor of this legislation and the enactment will aid in the consolidation of Forest lands by the elimination of the private holdings.

Oil and Gas Lands

The conference report on the bill to encourage and promote the mining of coal, phosphate, oil, gas, and sodium affects the National Forests. The report accepts the House amendment and provides that deposits of coal, phosphate, sodium, oil, oil shale, or gas owned by the United States, including those in National Forests, the Grand Canyon National Park, and the Mount Olympus National Monument, but excluding those in other national parks, shall be subject to disposition.

The Sawmill at Madison

Sawdust from the dwarf sumach of New England, the teak of Africa, the giant redwood of the Pacific Coast, and the mahogany of Honduras may be found mixed in the same pile at the new Forest Products Laboratory sawmill. A new five-foot circular saw has been added to the mill equipment at the Laboratory and all material for testing can be sawed direct from the log.

The mill has a capacity of 20,000 board feet daily, but the actual output will probably be considerably less since the lumber for test purposes must be sawed according to a special diagram for special purposes, which will require more than ordinary sawing.

Lumber Shipment for Norway

The first shipment of American house-building materials ever sent to the wood-producing nation of Norway has just been made, according to the Bureau of Foreign and Domestic Commerce.

About 120,000 feet of yellow pine left New Orleans direct for Norway. A second shipment of about one-half the size has already been sent.

Forestry in Idaho

A bill has been introduced in the Idaho legislature to establish a State forest bureau. It is estimated that the timber holdings in the State represent a value of $30,000,000. The bill as introduced provides for a nonsalaried commission of three members which is to have jurisdiction over a State forester, whose salary is not to exceed $3,000.

Forestry in Minnesota

The consolidation of the offices of the State Forester and the surveyor general in Minnesota is proposed in a bill now under consideration by the legislature. The bill prescribes certain duties of the forester, and fees, duties, bonds, and penalties relating to officers employed in State timber work.

Washington Notes

W. R. Mattoon spent several days last week at Newport News, where he gave a number of illustrated talks on forestry at the Y. M. C. A. Huts. The trip was made under the auspices of the National War Work Council.

Captain Findley Burns is back in private life and he is now making his headquarters in Baltimore as manager of the local office of a lumber company maintaining offices in several eastern cities.

Captain Robert Rosenbluth, formerly of District 4, was a visitor at the Atlantic Building last week. Captain Rosenbluth was in the Army for a year and a half and spent six months in France, most of this time in the sector near Amiens where the Germans tried their hardest to break through.

O. T. Swan, formerly in charge of the Office of Industrial Investigations in the Washington Office, was a caller at the Atlantic Building during the week. Mr. Swan is now Secretary of the Northern Hemlock and Hardwood Association and was in Washington to attend a conference of representatives of the War Department and the Hardwood Associations. The disposition of the surplus stock of hardwoods now in Government hands was discussed. As but 9,000,000 feet of hardwoods are on hand it was the consensus of opinion that the amount was too small to be even a factor in the market.

R. K. Helphenstine, Jr., made a trip to Baltimore and Annapolis last week. At Baltimore he appeared before Judge Rose of the U. S. Circuit Court for the District of Maryland in connection with a hearing involving a lumberman who had failed to deliver lumber of the grade called for by the specifications. At Annapolis Mr. Helphenstine inspected the oak timbers used in six harbor tugs now under construction for the Emergency Fleet Corporation by the Chance Marine Construction Company. The particular object was to identify the species used in the construction.

H. H. Chapman, Assistant District Forester in charge of Silviculture at Albuquerque, is in Washington on detail.

J. A. Mitchell has left Washington for a six-weeks inspection trip of fire cooperative work under the Weeks Law in Louisiana and Texas.

District 2

Assistant District Forester Fred Morrell attended the District 3 Supervisors' conference at Albuquerque.

District Forester Smith Riley expects to go into the Jackson Hole country about the middle of February on winter game study work.

H. R. Kylie, District telephone engineer, has just returned from a strenuous inspection trip on the Michigan, Minnesota, and Nebraska National Forests. He reports that a large part of the field work was done on snowshoes and by sleigh in a temperature of 20° or more below zero.

Submarine cable for telephone wire connecting the mainland with Star Island in Cass Lake, is one of the novel improvements proposed for the District. Star Island is a very popular summer resort on the Minnesota National Forest, and the proposed cable will give telephone connections from the Island to the Supervisor's headquarters at Cass Lake, and will also be of use to the many cottage owners of the Island for commercial purposes.

Fred Johnson and E. S. Keithley of the District and Pike offices, recently made a preliminary plan for the recreational development of Boulder Park, a mountainous area of 2,200 acres owned by the city of Boulder. The plan calls for the construction of improvements necessary to camping and picnic parties, and also for the planting of barren areas with planting stock obtained from the Forest Service.

With deep regret announcement is made of the death at Seattle on January 22 of Mrs. Teresa Van Dolah, formerly Forest clerk on the Leadville National Forest.

District 6

Major Howard B. Oakleaf, who recently returned to duty with the Forest Service after serving with the Bureau of Aircraft Production in America and overseas, leaves the Forest Service next week to go into the dry kiln consulting business at Spokane, Wash. Major Oakleaf was chief of the District Office of Products from 1913 until after the declaration of war, when he left Portland to take charge of inspection of aircraft and propeller lumber and aircraft parts in connection with America's airplane program. In his new work Major Oakleaf will be associated with M. L. Mueller, formerly a ranger in this District and more recently chief inspector of dry kilns for the Bureau of Aircraft Production.

A. L. Arneson, of Mabton, Wash., charged with fire trespass on the Okanogan, appeared before the Department of Justice at Spokane, February 11, and entered a plea of nolo contendere. Upon this plea he was adjudged guilty of the offense and fined $100 by the court. His attorney assured the United States attorney that the fine would be forwarded within a few days. This trespass consisted in leaving a camp fire unextinguished on the Okanogan Forest, in the Hidden Lake region. The fire spread over about eight thousand acres. It killed about fifteen million feet of sawtimber, with an estimated value of $7,650, and destroyed immature timber and young growth valued at $4,551 and forage worth $250. The cost of suppressing this fire was $5,444.54. Mr. Arneson was formerly president of the First National Bank of Mabton, and more recently has been engaged in the sheep business.

E. N. Kavanagh attended a meeting of the Wenaha Woolgrowers' Association at Walla Walla last week. He spoke on general cooperation between stock associations and the Forest Service for the mutual benefit of both, and laid special emphasis on the obligation stockmen have in connection with the use of National Forest range in the matters of protection from fire, assistance in suppressing fires, prevention of trespass, the cleaning up of doubtful ownership of stock, and the marking of stock with established and locally recorded brands and marks for the prevention of range complications and loss of stock by stealing.

The manuscript of "Vacation Land" has been thoroughly revised and brought down to date, and the material forwarded to the Washington office. Early publication is contemplated.

A bill has been introduced in Congress to add two sections of "O. & C." revested land near Ashland, Oregon, to the Crater National Forest. The purpose is to put this land under Federal protection because of its value as part of the city watershed of Ashland.

Advertisement has begun for the sale of 159,000 railroad ties and 7½ million feet of Douglas fir and western larch sawtimber on the Tonata Creek watershed, on the Colville National Forest, at the minimum prices of $1 per thousand for sawtimber and one cent, two cents, four cents, five cents, and seven cents apiece for crossties of grades one to five, according to railway specifications.

A permanent exhibit of cones and fruit of District 6 conifers, forest insects and their work, wood fungi, and wood specimens is being assembled in the District office. Oak cases for the protection of this exhibit have been purchased, and are being placed in the conference room. Mr. Jaenicke is supervising the work. The collection of wood fungi was obtained from Dr. Meinecke, of San Francisco.

One hundred pure-bred bulls were recently purchased by the Pine Valley Cattle and Horse Association for use in connection with grazing on the Minam Forest. Of this lot twenty head were registered Durhams purchased in Iowa at $300 per head; thirty registered Herefords purchased from the Hereford Corporation of Cheyenne, Wyoming, at $239.50 per head, and fifty local pure-bred Herefords and Durhams owned by various members of the Association and taken over by it at an appraised value of $269.06 each.

District 7

Supervisor John L. Cobbs, Jr., of the Arkansas, is in Washington for conference on business relating to his Forest. This is Mr. Cobbs' first appearance here since he assumed charge of the Arkansas Forest a year ago.

The proposed highway to connect Lynchburg and Natural Bridge, Virginia, and to be constructed under the Federal Aid Road Act is arousing considerable enthusiasm. This road is about 35 miles in length, of which 9 miles are within the Natural Bridge National Forest. Prospects are good that sufficient funds to construct the road will be raised. Two routes are proposed for the road after it leaves the Forest--one through Amherst County and the other through Bedford County. Both counties have made application and both are soliciting subscriptions.

The spring rush in timber sales in the district has started and advertisements of the past few weeks cover more than $35,000 worth of stumpage, as follows:

On the White Top Forest, the Martins Creek Unit includes approximately 3,700,000 feet, B. M., of sawtimber, 5,600 cords of acidwood, 1,500 tons of tanbark, 1,175 cords of pulpwood, 8,000 posts and 517 poles, with an estimated value of approximately $27,000; and the Whetstone Branch Unit contains approximately 671,000 board feet of sawtimber, 577 cords of acidwood and pulpwood, 160 tons of tanbark and 3,798 posts, with an estimated value of approximately $3,000.

On the Shenandoah Forest, the Hunkerson Gap Unit contains approximately 1,100 tons of bark and 495,000 board feet of sawtimber, with an estimated value of approximately $3,800.

On the Savannah Forest, the Possum Branch Unit contains approximately 141,000 board feet of sawtimber, 300 cords of acidwood, 40 tons of tanbark and 80 poles, with an estimated value of approximately $1,300.

Captain E. L. Lindsay paid the members of the District Office a visit during the week.

Captain Lindsay was a member of the 2nd Battalion, 10th Engineers, and went to France in the summer of 1917. The original battalion was under the command of Major C. S. Chapman, now Lieutenant-Colonel. Practically the entire battalion was stationed in northeastern France in the Jura Mountains. Their operation was confined for the most part to forests of fir and oak and the companies operated 20,000-foot mills. The record cut from these mills was made by the 37th company of this battalion.

Captain Lindsay states that a great many of the Forest Service men who went overseas with this battalion as enlisted men have since been commissioned and assigned to various activities in connection with the supply of material and fuel for the A.E.F.

After a 24-days sojourn at Brest, the battalion left there on January 28 on the Battleship North Carolina and arrived at Hoboken on February 9. The whole battalion went to Camp Mills where it was split up into detachments and sent to demobilization camps.

WEEKLY BULLETIN

Forest Service - Washington Office

(Not for publication)

March 3, 1919.

Forest Area Destroyed in France

The Service of Forests and Water Supply in the French Department of Agriculture estimates that 1,200,000 acres of forest land have been destroyed by the enemy. Over half of this wooded area belongs to the Government or to the communes.

There were about 750,000 acres of woodland within the war zone which have not been cared for since the beginning of the war and which have for that reason lost much of their value. The complete loss of at least one-quarter of this area is counted on, which would make a total loss of nearly 1,500,000 acres.

Therefore through the destruction by the Germans and by battle France has lost nearly 10 per cent of its lumber and 6½ per cent of its firewood. It is estimated that the war has destroyed over 2,000,000,000 board feet of lumber.

Effect of Gunfire on the Rainfall of the British Isles

The much discussed question of the effect of the gunfire in Europe on the amount of precipitation in Great Britain is given a definite answer in a statement made by Dr. H. R. Mill, director of the British Rainfall Organization.

Two districts were considered--one in southeastern England, which was nearest to, and the northwestern district (comprising stations from Sutherland and the Hebrides to the west coast of Ireland), which was farthest from the scene of the firing in Flanders.

The monthly rainfalls from 1909 to 1917 are summarized in percentages of the average. In the period before the war there were 14 dry or very dry months in southeastern England and 12 wet or very wet months. During the war there were 12 dry or very dry and 13 wet or very wet months. A single month transferred from one category to the other would bring about an equality or even a reversal. In the northwest, in the same two periods, very dry months were equally numerous, and there were no very wet months. Taking dry and very dry months together, there were 7 before and 14 during the war, and of wet months there were 14 before and 15 during the war. Dr. Mill points out that much emphasis has been laid on the relative wetness of the years 1915 and 1916 in southeastern England, but this record should be considered in connection with the fact that the year 1917, when the war was in a very intense phase, had a nearly normal rainfall.

Immense Road Building Program

With full State cooperation according to the terms of the Federal Aid Road Act, the United States will have a total of $574,000,000 for cooperative road building during the next three years. The Federal part of this fund is assured by an extra appropriation of $209,000,000.

The National Forests come in for $9,000,000 available for expenditures by the Secretary for roads and trails within or partly within the National Forests. This increase does not affect the provisions of Section 8 of the original act, but is an entirely independent appropriation.

Officials of the Bureau of Public Roads, U. S. Department of Agriculture, which administers the provisions of the Federal Aid Road Act and cooperates with the State governments in the expenditure of the money, point out that this amount of funds is the largest ever appropriated for similar purposes and for a similar period by any government in the history of the world, and that it enables the Federal and State governments to carry out a road-building program of a magnitude never equaled.

In connection with the great Federal-aid program it is also noted that expenditures for highway work in the United States this year are likely to amount to half a billion dollars or more. On reports received from State highway departments, the Bureau of Public Roads estimates the 1919 expenditures for roads and bridges at $385,000,000, or $110,000,000 more than the average expenditures for 1916 and 1917.

Road Definition Broadened

An important effect of the law containing the new appropriation is that it broadens the definition of a rural post road, under which class a highway had to qualify in order to receive the benefits of the Federal Aid Act.

Under the old act it was required that mail should actually be carried on the road or that there should be a reasonable prospect that mail would be carried on it within a short time after improvement. The new act says, "****the term 'rural post roads'****shall be construed to mean any public road, a major portion of which is now used or can be used, or forms a connecting link not to exceed 10 miles in length of any road or roads now or hereafter used, for the transportation of the United States mails, excluding every street and road in a place having a population, as shown by the latest available Federal census, of 2,500 or more, except that portion of any such street or road along which the houses average more than 200 feet apart."

Government Limit Raised

The new act also raises the Government limit of contribution from not to exceed $10,000 a mile to not to exceed $20,000 a mile, taking account of higher present costs of labor and materials.

The law also authorizes the Secretary of War to transfer to the Secretary of Agriculture material, equipment, and supplies suitable for highway improvement and not needed by the War Department.

The original Federal Aid Road Act, which became law in July, 1916, appropriated $75,000,000 to aid in the construction of post roads during a five-year period ending June 30, 1921, and $10,000,000 to aid in forest-road building during a ten-year period ending June 30, 1926. Not over $3,000,000 of the original $85,000,000 had been expended prior to 1919, so that $82,000,000 plus $209,000,000, or a total of $291,000,000 of Federal funds will be available, of which $287,000,000 will be available during the next three years. The act and its amendment require the States to provide at least an equal amount on the post-road work, and it is customary for the States and localities to contribute toward the forest-road work.

Changes in National Forest Boundaries

Changes in the boundaries of several Forests were made recently:

A tract of 58 acres was eliminated from the Challis National Forest to make the land available for townsite purposes by the residents of Stanley, Idaho, and the vicinity. The area is situated on the north bank of the Salmon River. A number of buildings are already on the land, and the plan is to block off the land for townsite purposes. The Executive order limits the disposition of the land to the provisions of the townsite laws.

A tract of 7½ acres was eliminated from the Cabinet Forest to make it available for townsite purposes of the town of Noxon, Montana, which is situated immediately outside the Forest and seems to require the land for further expansion. Noxon is a railroad town on the Northern Pacific Railway. It is planned to have the excluded land disposed of under the townsite laws. At present a number of buildings have been erected on this tract under Forest Service special use regulations.

A total of 31,779 acres were excluded from the Helena Forest. Most of the land excluded is already in private ownership and is situated along the exterior boundaries of the Forest. The various changes in boundary were the result of land classification work of the Forest Service and the action taken was based on the reports showing that the lands had practically no value for Forest purposes.

New Map for the Tongass Forest

An atlas base map for the Tongass National Forest, Alaska, is in course of compilation. The completed map will provide the Tongass a practicable working map comparable to the standard atlas of other Forests. At present there is no suitable map available. The Tongass is the largest Forest and also one of the best revenue producers in District 6.

New Map for the Tongass Forest (continued)

The new map will be on the scale of one inch to the mile. Each sheet, which is of standard atlas size, embraces an area of 20 minutes of latitude by 15 minutes of longitude, or, roughly, 13 by 18 miles. These sheets are grouped into quadrangles of 12 sheets, numbered 1 to 12 and further identified by the quadrangle name. Each quadrangle is of one "square" degree area and named after the most important feature within its bounds.

The project is the first to combine in one map the surveys of the U. S. Coast and Geodetic Survey, U. S. Geological Survey, General Land Office, Surveyor General, private parties, and U. S. Forest Service.

There are no rectangular or General Land Office surveys, and so the control for these maps is based on the coast triangulation of the U. S. Coast and Geodetic Survey, which is to the Tongass what the General Land Office surveys are to the other Forests.

The Tongass comprises more than 15 million acres. The map, on completion, will comprise over 200 sheets. Eighty are now completed. There are about 4,000 Coast and Geodetic Survey triangulation points to be plotted, all of which have to be rectigraphed copies from records on file in Washington.

Added to these are maps and surveys from all other sources, which have to be reduced to uniform scale and plotted in their proper places.

A unique feature of the plan is that the map is being completed on tracing cloth. A negative will be made of each sheet, from which prints will be made as needed. By this method further copies can be made as needed to furnish the field force with copies for current work. Correction of any one sheet can be made without affecting any other.

Colonel Greeley Writes

The following letter was received by a member of the Washington office:

Tours, France,
2 February, '19.

Looking over a copy of "American Forestry" the other day, I noticed an item about the Christmas boxes for the Forestry troops, which had been packed by Forest Service women, and then I saw a picture of your tall self and other Forest Service angels busily engaged on the job. I realized what a hand you all have had in the Merry Christmas of the boys in our camps. I want to thank you and the other Forest Service women personally and most sincerely for the pains and work which you have taken to add to the Christmas cheer of our men. I have heard some of them speak most glowingly of their Christmas packages from Washington. You may be assured too that the time and care were well spent. It was the second Christmas from home for many of our boys and, with very uncertain prospect of getting home, a rather forlorn one.

After many tribulations, we have at last gotten all of the old 10th Engineers on boats and off. All of our troops are being held back by the necessity of repairing French highways and their evacuation will progress slowly. I am hopeful, however, of moving 4 or 6 additional companies by March 1st and of keeping up at least that rate for each succeeding month. "Fighting Bob" Stuart, after running 5,000 black troops on cutting fuelwood, has now become Commander of the 5th Battalion, 20th Engineers, with a large district in central France to manage. Major Keifer is still with me in the central office of the Forestry Section at Tours***. Capt. R. C. Hall still stoutly defends Paris from all onslaughts; but I can not vouch that he will return home with the same unblemished character as of yore. I suspect that one might even find him on a Sunday afternoon seated at a little table on some Parisian boulevard, with a glass of vin rouge in front of him. I rather doubt if Capt. Swift Berry ever comes back home. From latest reports, he is contemplating running for Governor of the Landes after the war. He certainly knows every one there, talks their patois like a native, and has each individual tree tagged and labeled in his notebook. Col. Peck is still our mainstay at General Headquarters and has been running fuelwood operations all over the map of northern France, with some 10,000 colored troops.

Colonel Greeley Writes (continued)

I have no idea when I will come home. I rather think it will be on the last boat. Our French friends are not overlooking any sous in the settlement of our forest purchases, and I am probably elected to see the game through to the last franc.

Thank you and the other girls again for doing so much for the comfort and pleasure of our boys.

Very sincerely yours,

W. B. Greeley.

Utilization of Wood Waste

The rapid decrease in the supply of first -class lumber is causing substitution of other materials, such as concrete and steel, for the structural use of wood. On the other hand, wood waste and inferior grades of lumber are being used in new products every day in an effort to prolong the life of the timber supply.

Classified by processes of treating the raw material there are four general types:

1. The simplest process is the manufacture of wood flour. It is made by grinding spruce or hemlock on the end grain, against a revolving grindstone, the wood being kept constantly in a wet condition while grinding. Wood flour made in this way is mixed with other materials in the manufacture of explosives, linoleum, and phonograph records.

2. Another process is the use of spent tanbark in the manufacture of shingles and roofing felt. Bark from which the tannin has been extracted and applied to leather goods, is ground up and made into sheets in a manner similar to the treatment of wood pulp in papermaking. The sheets are waterproofed by impregnating with asphalt. This material can be used as roofing felt after removing the excess asphalt and drying. Material for shingles is made in the same way with the addition of fine crushed stone to toughen the surface. The function of the bark in these products is to furnish an absorbent for the asphalt and decrease the cost of manufacture. When the price of rags for paper went out of sight, tanbark was successfully substituted for rags in roofing felt and shingles.

3. A third method of treating wood is the paper-making process in the production of twine, rope, webbing, furniture reed, basket braid, and rugging. The sulphate or kraft paper process is employed, as this gives the toughest paper. Paper made from this chemical wood pulp is twisted into strands, and in furniture reed shellac is applied as waterproofing. This material is now produced in commercial quantities in this country. The furniture reed is sometimes reenforced by a wire core. Sisal, the Central American hemp, is also used as a core, in the manufacture of twine.

4. Viscose is the technical name of the wood product used in the manufacture of fibers for wood silk, in grease-proof sausage casings, and in protective covering for the contents of candy boxes. The general process of viscose-making is known, but the details are trade secrets. In general the wood is first treated by the sulphite process to get wood pulp. The pulp is dissolved in caustic soda and the resulting solution is carbon bisulphide. The resultant substance is run through dies if strands are desired, or spread out into sheets. A hardening solution is applied, after which the viscose is ready for commercial use as silk fiber or as protective covering.

Experiments along the lines above enumerated are being carried on at the Forest Products Laboratory.

A Forester for Porto Rico

The Insular Forest Service of Porto Rico is looking for a qualified man for the position of Assistant Forester. The maximum salary set by the law is $2,400. If possible, a forester with experience in subtropical forests is desired, although this qualification is not held absolutely essential.

A Forester for Porto Rico (continued)

Tracts of varying size, some as large as 15,000 acres have been set aside as insular forests. Reforestation is the most essential feature of forest administration in the plans for Porto Rico and on this account this position should appeal to men particularly interested along these lines.

Further information may be obtained on application to the Forester.

Private Forester in Virginia

Word has been received from the president of the Pine Hill Coal Company that at the present no appointment of forester to take charge of the lands in Virginia will be made.

Some time ago this company wrote to the Forest Service asking that a qualified forester be recommended to take charge of a tract of land. This seemed to be an excellent opportunity for a man with training in agriculture, stock raising, and forestry.

The names of the men in the field who had indicated the wish to be considered were forwarded to the company, which now states that a temporary curtailment of plans will necessitate postponement of action.

Machinery for Cutting Firewood

Power machinery for cutting firewood offers a practical solution of the fuel problem on farms where wood is available. The coal stringency of last winter caused many to turn to wood. A Farmers' Bulletin, "Machinery for Cutting Firewood," has just been published, which aims to show how the farmer and others possessing woodlands can readily prepare for the stove the necessary firewood and so make themselves less dependent on coal. The ease with which it is possible to get coal has in many instances crowded out altogether the use of wood.

Power machinery for cutting firewood offers a practical solution of the fuel problem on farms. It makes it possible to reduce the labor requirements to the point where the farmer should be able to get his wood ready to burn without seriously neglecting other work. A great many farmers already have gasoline engines suitable for furnishing power for wood-sawing machines.

In setting forth how this available power can be used to the best advantage, the bulletin considers in careful detail the various preparatory steps necessary. Suggestions cover the felling of the tree, the cutting up into log lengths, and the location of the saw. Owing to the large initial outlay where it becomes necessary to buy the gasoline engine and the saw outfit, cooperative arrangements between several individuals is the most satisfactory solution.

New Forest Legislation for California

The organization of a fire-protective system under State control is provided for in a measure prepared by State Forester Homans and now before the legislature.

The measure provides for the division of the State into such a number of suitable fire districts as the State Forester may deem necessary; the making and enforcing of rules and regulations for the organization, maintenance, and government of such districts, and the appointment of district rangers at $150 per month and necessary expenses, these rangers to have charge of the fire-fighting system under the direction of the State Forester.

Proper means of fire prevention, and fire-fighting implements and apparatus are to be provided for the districts. Fire-fighting companies are to be organized and lookout stations maintained.

Provision is made for cooperation between State and Federal, as well as county and municipal agencies, for fire protection, forest management, reforestation, and afforestation. Authority is desired to summon any able-bodied man to assist in the suppression of any forest fire.

The measure is designed to make State-wide the idea which the State Forester put into operation during the war in more than twenty counties for the protection of the forests of the State. It will place forest-fire fighting under

New Forest Legislation for California (Continued)

control of the department and provide machinery for organizing effective fighting units in the counties where forest fires are a menace.

A bill has also been introduced to authorize the establishment of a State nursery under the juridiction and management of the State Forester to grow nursery stock for planting along the State highways and public roads. An appropriation of $48,000 is asked for in this connection.

A bill to increase the State Forester's salary from $3,000 to $4,000 has also been prescribed. This will also increase the salaries of the deputy forester from $2,400 to $3,000 and of an assistant from $1,800 to $2,400.

Free Trees in Pennsylvania

A large supply of seedlings is available without charge to citizens of Pennsylvania, according to an announcement by the Commissioner of Forestry. The stock available is 3-year-old white pine, red pine, Norway spruce, European larch, arbor vitae, and a limited quantity of Japanese larch and white ash.

There are no strings to the offer, the only condition being that applicants plant not fewer than 500 trees, pay for the packing and transportation, and actually set out the trees in Pennsylvania for reforestation.

Planting Roosevelt Memorial Trees

The Boy Scouts in New York City will set out one million pine trees in the Interstate Park, according to the plan of the park commissioner.

Scouts in Philadelphia will hold special Roosevelt Memorial services on April 5 and then plant a memorial tree.

Columbus Scouts will plant trees on the State House grounds. Each troop will plant a tree and the completed group will be known as the Roosevelt Grove.

In Everett, Washington, the Boy Scouts will plant trees along the highway from Skagit in honor of the soldier and sailor dead and will include trees for Roosevelt.

Chicago plans a memorial in the forest preserve.

In Syracuse the Scouts will plant a number of "Roosevelt Elms" in each city park. The same is to be done in Rochester, N. Y.

In Marion, Ind., a row of memorial trees will be planted.

Windbreak to Cost $100,000,000

The British Government is reported to have under consideration a plan to create a wind screen of trees along the top of the cliffs of the exposed west coast of Great Britain at a cost of 20 million pounds. This windbreak will not only supply much wanted wood but will prevent the salt Atlantic gales sweeping over and souring the land behind it, so freeing millions of acres of land for wheat and other cereal cultivation.

Forest Products Laboratory

Methods of preventing the rotting of lumber in yards and in finished buildings were described by Mr. Humphrey of the Forest Products Laboratory at a meeting of the Forest Products Club on Thursday evening, February 13.

Mr. Humphrey showed by lantern slides the action of various parasites on trees and lumber. On a recent trip to lumber yards and timber buildings he found conditions which could be remedied and a large saving made to the lumber companies.

Improved methods of manufacturing doors are being studied by the Forest Products Laboratory in cooperation with a wholesale association. Various makes of doors will be tested for strength and for the effect of humidity conditions in warping the wood.

Washington Notes

T. W. Norcross has returned to Washington from his western trip made in connection with road matters.

D. D. Bronson has left Washington and is making his annual visitation of the District headquarters in connection with allotments.

Assistant District Forester R. Headley, of San Francisco, has arrived in Washington for a brief detail.

District 1

District Engineer E. W. Kramer recently gave an illustrated talk to the forestry students of the University of Montana on the hydro-electric power of Montana.

District 2

Lieutenant Rufus J. Pilcher, A. S. S. C., formerly ranger on the Black Hills National Forest, and pilot gunnery instructor at Taliaferro Field, Hicks, Texas, has applied for reinstatement in the Forest Service as an aero pilot for patrol duty in connection with fire detection.

The Denver Section of the Society of American Foresters has held a number of interesting and instructive meetings since the first of the year. Among the papers presented for discussion were "Scientific Solution of Range Problems," by Grazing Inspector Lynn H. Douglas, and "National Forest Improvements" by Supervisor A. M. Cook.

Forest Examiner Hutchinson has completed his report compiled with the assistance of Deputy Supervisor A. M. Baum of the Beartooth National Forest, on the proposed winter reservation for northern Yellowstone elk herd in the vicinity of Gardner, Montana. A type map covering 128,540 acres was prepared on a scale of 2 inches to the mile, and maps of 67 improved ranches were made on an 8-inch scale. It was found that within the proposed reservation, there were 2,600 acres of cultivated land and some 24,390 acres of patented holdings exclusive of public domain and lands within the Absaroka and Gallatin National Forests. If this patented land were purchased at flat rate of $20 per acre, the proposed elk range project would cost the Government half a million dollars.

District 3

The sign shop in this District is running full time. To date more than 1,800 trail-sign requisitions have been submitted. If this speed is maintained, signs will be found in goodly number throughout the District.

District 6

Lieutenant W. H. Gibbons, who has been with the Tenth Engineers in France for the last eighteen months, passed through Portland en route to Camp Lewis on February 18. There were four officers and one hundred fifty nine men from the Tenth and the Twentieth Engineers on the train. Among them were Harry R. Elliott, Hugh Thornton, Ben Lyle, and Ellsworth Taylor, formerly employed on the Colville, and James Hutchings, formerly employed at the Wind River Nursery, on the Columbia. About forty members of the District Office met Lieutenant Gibbons at the train. District Forester Cecil handed the Lieutenant a copy of "Logging in the Douglas Fi Region," recently published by the Department. This bulletin was written by Mr. Gibbons before he left for France and this was the first knowledge he had received of its publication. During his two-hours stay in town he visited the new District offices and spent the noon hour at the round-table. Lieutenant Gibbons expects t be discharged in a few days and return to his work in the District Office.

Emil Dallenbach, formerly employed in the District Office and now a member of the 65th artillery, passed through Portland en route to Camp Lewis with his regiment on February 17. The troop train remained in the city for about seven hours, giving the 65th an opportunity to march from the depot to the auditorium, where dinner was served them by the citizens of Portland. The streets along the line of march were gay with flags and bunting, with a Victory arch near the Union Depot. Crowds thronged the streets all along the way and cheered the boys as the marched past.

District 6 (Continued)

Deputy Supervisor C. T. Beach, of the Siuslaw, is in the District Office on detail. He reports that work has started on the Three Rivers Road, between Dolph and Hebo. It is a Federal Aid road, built by the County, State, and Government in cooperation. There are about seven miles yet to be built. During the construction work travel to the Coast will be routed over the Little Nestucca Road, on which about six thousand dollars will be spent to make it suitable for this extra use. Travelers strike the Little Nestucca Road near Dolph and return to the Tillamook Road at the drawbridge.

Since the season of 1911 three hundred ninety-two entry surveys have been made in the District. Three hundred twenty-three of these have been approved and two hundred fifty-three accepted. Under the direction of George W. Root and E. R. Johnson, two three-men entry-survey parties are planning to leave for Alaska about May first to make from twenty-five to thirty entry surveys on the Tongass and fifteen on the Chugach. After this season there will probably be little entry-survey work in the District anywhere except in Alaska.

Major H. B. Oakleaf has finished the manuscript and drawings for his bulletin on Lumber Manufacturing in the Douglas Fir Region and submitted them to the Forester for approval and publication. Major Oakleaf leaves for Spokane February 23, where he and H. L. Mueller, formerly a ranger in this District, will open an office as consulting engineers in dry-kiln construction.

Acquisition

George F. Greenleaf has obtained his discharge from the army and has decided to enter the private lumber business and so will not resume his duties as Forest Assistant in the Forest Service.

George E. Marshall, Lumberman, has resigned to enter private work. Mr. Marshall has been identified with Acquisition since 1912.

Rezin Pidgeon, Transitman, has been reinstated on his discharge from the army and is now ready for field work with the Forest Service.

H. G. Wood, who was on a two-months' furlough, has been reinstated. Mr. Wood used his vacation for a trip to Panama where he made a study of tannin materials, particularly the mangrove.

WEEKLY BULLETIN

Forest Service - Washington Office

(Not for publication)

March 10, 1919.

Hold Your Liberty Bonds

The Federal Trade Commission has asked all publications cooperating in the Victory Liberty Loan Campaign to assist by voluntarily publishing a call on owners of bonds to hold on to them. The Weekly Bulletin may not perhaps be classed as a "publication," but we are nevertheless cooperators in the campaign and therefore call the attention of our readers to the notice:

> WATCH THE STOCK PEDLERS
>
> READERS: Get the names and addresses of all persons and companies offering you speculative, doubtful stocks and securities, particularly if in exchange for your Liberty bonds and War Savings Stamps, with copies of their "literature." Mail them promptly for investigation to the
> Federal Trade Commission,
> Washington, D. C.
>
> ---
>
> HELP THE VICTORY LIBERTY LOAN

The Winning Color

Ever since the organization of the Forest Service the Branch of Grazing has used "red" as a distinctive color for its signs, particularly for stock trails and driveways. There has always been considerable criticism of this color because of its lack of permanence. There were so many excellent reasons why the grazing signs should be distinct from all others used on the Forests that the Branch disliked to give up the red, even though its use necessitated the occasional renewal of the signs. During the time the signs were of cloth this renewal did not involve any unusual or unnecessary expense or labor because of the short life of the average poster. However, with the use of metal signs, which are presumed to last for many years, the question naturally became one for further consideration.

In order to reach some definite conclusions, Arthur W. Sampson, in charge of the Great Basin Experiment Station, undertook a systematic study of the lasting qualities of the signs, extending over a sufficient number of years to make the results reasonably positive. This was done, and the signs were placed in position and studied for the three years during 1916, 1917, and 1918. The results are interesting and instructive. It was observed that signs facing either south or east faded and wore out much faster than the others. All of the cloth signs, whether red, green, or white, were either faded almost entirely out or worn so badly by the elements as to be of no further use.

As to colors, the green poster, Form 311, cloth driveway notice printed in French, gave the best results, for although the green faded within the first twelve months to a clean white, the black letters were plain and distinct and it proved to be the best of all the cloth signs both in letters and material.

The Winning Color (continued)

Of the metal signs, Form 293, marking the center of the stock driveway, which was scarlet in color with black letters, proved itself the best of all the red metal signs, the color fading from brilliant scarlet to a light brown, the lettering remaining fairly distinct. The color of this Form 293, "This marks the center of the stock driveway," was the result of considerable research in an effort to discover a red color which on metal would be more permanent than those used heretofore.

The results of this test indicated that in all probability, with the study which has been given the whole subject of dyes and colors during and since the war, we shall be able to secure a red which when placed upon metal will be reasonably permanent in its lasting qualities. The outstanding point in the experiment, however, was the excellent lasting qualities of the Forest Service cruisers poster, Form 458. The dark indigo blue of this little metal poster, which is about 4 x 5 in size, had faded at the end of the second year to a light blue which held practically permanent to the end of the three-year period. Mr. Sampson in his report states that at the close of the experiment at the end of the three-year period this blue form was really more conspicuous than when it was first placed on the board.

The position taken by the Branch of Grazing in the use of the red color has always been that, since our forms were used to denote closed areas or the boundaries or centers of stock driveways, they must be of a color that would in itself give the sheep herder floundering along in the dust at the tail end of a band of 2,000 sheep some idea as to what the sign meant, without the necessity for his walking or riding clear over to the sign to read it. Warning signs of this color are designed to protect the herders from trespassing on closed areas or grazing their stock outside of the driveways. The penalty for doing this falls upon the owner of the stock and occasionally the herder himself. Therefore it was felt that the red was a distinctive sign which the herders could always recognize, whereas if the signs were of black and white they would not be able to tell whether it was a boundary sign, a camp sign, a road sign, or an advertisement for somebody's "hair restorer." For this reason the Branch of Grazing dislikes to change from the color, believing that even though the signs must be renewed every three or four years the expense of doing so is justified. The perpendicular signs to mark the center of a driveway were designed to assist in this identification, as by the position of the red signs a herder knows at once where he is on the driveway. In the meantime we propose to make further investigations into this color matter in the hope of ultimately securing a red sign that, though it may fade somewhat from its original brilliancy, will be true enough to the color to make its use practical for more years than the present signs.

WILL C. BARNES.

Victory Trees

Memorials for our soldier and sailor dead are to be erected throughout the country. The individual man belongs by ties of blood and human affection to a few, but he also belongs to the entire nation for whom he died, and so it is proper that the people as a whole give the question of memorials united and coordinated consideration.

The use of trees for memorial purposes is meeting with considerable favor. Some advocate the planting of single trees in city parks as individual memorials for some one of the immediate neighborhood; others suggest street trees in the city or along country roads; still others feel that the dedication of entire groves or forests more adequately does honor to the men. Whatever method of honoring the dead is finally adopted in the local community, some missionary work to good effect can be done by Forest officers wherever trees are selected as the proper memorial.

Practical and esthetic considerations enter into the question. The selection of the right kind of tree is first, and next comes the selection of the site. There is no one tree that can claim superiority over all other trees throughout the whole country. In each region there are several indigenous species that are well adapted for this purpose. For memorials of Americans who fought for their country exotics should not be used.

Victory Trees (continued)

The participation of Forest officers in the smaller western communities, that have no city forester, in any program that involves a tree memorial will be productive of much good. It will also serve to emphasize the fact that the interest of the Forest officers extends to activities other than those forming a part of their regular work.

Two Hundred Forty Dollar Bonus Begins July First

Fortunately the bill providing for the $240 salary bonus for employees in various bureaus and departments, including the Forest Service, getting $2,500 or less was passed before the closing days of Congress and so escaped the fate of several other bills in which the Forest Service had an interest.

Provision was also made for a commission consisting of three Senators and three Representatives to study the question of salaries. The activities of this commission are restricted to the District of Columbia, and so in all probability no extensive consideration will be given to field conditions. Members of the commission are Senators Henderson of Nevada, Spencer of Missouri, and Jones of New Mexico, and Representatives Keating of Colorado, Cooper of Wisconsin, and Hamlin of Missouri.

Daylight Saving Law

A rider for the repeal of the "daylight saving" law was to be attached to the agricultural bill in the Senate. The failure of the bill to come up prevented any change in the law.

This means that we must all go to bed on time on Saturday, March 29, and set our timepieces ahead sixty minutes in order to be square with the world the next morning.

Under the provisions of the law the change is made at 1 a. m., the last Sunday in March. We can make up the hour next October.

Agricultural Appropriation Bill

The Agricultural Appropriation Bill, which carries the money for the Forest Service, got caught in the jam and failed of passage. As reported out by the Senate, the bill contained some features of particular interest. The ten per cent interchangeability clause affecting Forest appropriations was stricken out. This provision authorizes the Forest Service to increase or decrease the appropriation to a Forest by not to exceed ten per cent of the original appropriation as carried in the bill. This authority is of great importance in the redistribution of funds to meet contingencies which it is not possible to foresee at the time the estimate is made.

Another change made by the Senate was the elimination of the specific automobile mileage. It will now be necessary for the new Congress to consider the bill in the special session before June 30.

The Senate also added $2,000,000 for purchase of lands under the Weeks Law, as additions to the existing Purchase Areas in the East.

Leasing Bill Talked to Death

The so-called leasing bill, which concerned itself with the disposition of coal, gas, oil, phosphate, and other lands, was talked to death, and its sponsors in the Senate withdrew it when it became apparent that there was no chance for it to get by.

This bill was of special interest to the Forest Service because of the provision in it making it applicable to the National Forests.

Water Power Bill Fails

The water power bill got jammed and failed to pass. After a series of delays it appeared a short time ago that the bill had a good chance of passing. All difficulties had apparently been ironed out. It will now be necessary to start over again with the new Congress, but the feeling is that much of the work done in getting the bill along in the Congress just expiring will not have been lost but will be of great assistance when the bill or one similar to it comes up for discussion.

Exchange Bill Fails

The special exchange bill affecting lands in the Lolo, Bitterroot, and Missoula Forests failed of passage. The interesting feature was provision for the issuance of scrip for the land transferred to the Government. This scrip the holders could exchange for timber stumpage in Montana National Forests.

Addition to the Modoc Forest

Under a special act of Congress a small addition has been made to the Modoc Forest in California. The particularly interesting feature of this legislation is the fact that Congress has added lands to the Forest not because of their value for forest purposes but because of their grazing value. This is the first instance where avowed grazing lands have been added to a National Forest in order to put the administration under the Forest Service.

Pitwood in England

Licenses for the importation of pitwood from Newfoundland, Spain, and Portugal to Bristol Channel ports are now being issued by the British Controller of Timber Supplies. Purchases may also be made in Scandinavia and Finland for import in sailing ships to northeast coast ports.

England has an afforestation plan which, if carried out, it is hoped will make that country less dependent on outside supplies of lumber and will safeguard its own supplies in the event of future wars. The Interior Forest authority has powers to spend $500,000 on investigations. It is claimed that, by afforesting 1,770,000 acres in addition to the 3,000,000 acres already in woodland, the country could be made independent of imported lumber for three years in an emergency.

It is stated that during the five years preceding the war the home production of timber was less than 8 per cent of the consumption, and that during 1915 and 1916 the cost of imported lumber was $370,000,000. Against this it is only claimed for the new enterprise that at the end of forty years, after absorbing at least $75,000,000, it might possibly be self-supporting. Present plans contemplate the afforestation of 250,000 acres in the next ten years at an estimated cost of $17,500,000.

Management of Pulp wood Forests

Conclusions as to the proper methods of management of forests in New England for the production of pulpwood were set forth in a paper recently prepared by W. R. Brown of the Brown Corporation, Berlin, N. H. The study extends over a period of twenty years and considers four systems of cutting spruce, fir, and pine, with a little cedar, hemlock, and tamarack mixed in.

The wood is cut to produce lumber and pulpwood, being taken in 38-foot logs for lumber and 4, 8, and 12-foot lengths for pulp. The present method of cutting on the company's land is to follow a 9-inch stump diameter rule for spruce and pine and cut the fir and other softwoods clean, being exceedingly careful to protect and save all the young trees and sprout growth possible while getting out the mature timber. This leaves in a spruce type stand a sufficient number of vigorous young trees to restock the land, able alike to produce seed and elastic enough to bend before the gales, and if blown over not of sufficient content to make a large loss in the aggregate. Hardwoods are taken wherever possible. Spruce stands in heavy hardwoods are either cut clean or allowed to remain to such a time as a means of getting the hardwood to market can be found. To suit local conditions frequent modifications are made, based on a preliminary survey, plotting of areas, laying out of jobs, marking trees to be left if necessary, careful supervision of cutting, and frequent inspection by a trained forester.

The conclusions drawn by Mr. Brown are:

1. The theory of diameter limit in cutting should be based on the average age of the stand, instead of on the average size of the trees.

2. Mature old growth softwood stands are commonly best handled if cut clean, occasional seed trees being left and sacrificed for the reproduction which they may bring. Even these seed trees are not always necessary to a splendid natural reproduction of young softwoods.

3. In uneven aged mixed stands in deep soil and well protected from the wind, thinnings can be made to advantage by selective cutting, provided the hardwood is always thinned also.

4. In even-aged softwood stands where the soil is deep and there is protection from windthrow, the strip or group system of cutting can be practiced successfully.

5. Balsam fir should be cut practically clean in any silvical system practiced, as it often proves to be unsound, matures and dies rapidly, needs no assistance in reseeding, and if not thinned will reseed in such abundance as to check the more valuable young spruce.

6. Most land originally suitable for softwood, carrying a mixed soft and hardwood growth, will restock itself quickly and abundantly if the hardwoods are cut down or thinned out. The taking of hardwood is, of course, largely dependent on nearness to market and transportation, and it is not always possible to remove it. When the region is remote and softwood reproduction is desired the girdling of hardwoods should be seriously considered.

7. Any selection or group system of cutting presupposes more or less loss from blowdown. This should be carefully balanced against the opportunity to salvage the down timber. Clean cutting is therefore particularly desirable for distant and inaccessible places.

Forestry in the Southern Appalachians

The Washington Section of the Society of American Foresters will hold its next meeting on March 20, 1919. The program as announced will be "Forestry in the Southern Appalachians," which will be discussed under the following heads: Influence of Government Ownership, by W. L. Hall; Effect of Changed Conditions upon Forestry, W. W. Ashe; Progress in Silvicultural Practice, F. W. Reed.

The open meetings of the Section are now held at the Wilson Normal School, where facilities are provided for the use of a lantern, not to mention refreshments.

Experimental Tree Planting in Nebraska

Members of the Morrill County Farm Bureau in Nebraska are to make spring trial plantings of trees on their home grounds and farmsteads. This work is being done under the guidance of the county agent for Morrill County.

It is planned to use for this trial plantings of western yellow pine, jack pine, Chinese elm, hackberry, elm, and Russian olive. The main purpose of the plans as outlined is to beautify the grounds, with nothing to indicate that consideration is to be given to the selection of trees that would satisfy esthetic demands and at the same time have a value as a possible source of supply for the wood demands on the farm.

The exhibition of some interest along these lines on the part of the farmers would indicate that there exists a fertile field for missionary work in behalf of farm forestry.

Walnut Plantation in Utah

As long ago as 1866 black walnut was planted in Utah. George Ritter, who lives about 4½ miles southwest of Ogden, had as part of the load which he carried in his prairie schooner from Council Bluffs, Iowa, two bushels of walnuts.

Walnut Plantation in Utah (Continued)

The walnuts were planted in the fall of 1866. The idea was to form a windbreak about the farm buildings and the trees now stand very crowded in the rows. This crowded condition, of course, has affected their development.

Some of the trees are 23 inches in diameter and have reached a height of 70 feet with a merchantable length of as much as 36 feet. Had the trees not been planted so densely, it is safe to assume that the general development would have at least equalled that of the dominant trees, which average 17 inches in diameter d.b.h., have an average total height of 65.5 feet, and a merchantable length of 14 feet. There are in all 149 trees. The plantation is now 52 years old.

Fruit is borne prolifically and the owner estimated the crop to be at present about 100 bushels. The current market price is $2.40 per bushel.

As it stands, the owner has received from the walnut trees a valuable return for his efforts in the form of protection and the sale of the fruit.

California Grows

The abbreviation for California has grown to Calif. This is by a recent decision of the Geographic Board, which makes the use of the new form, Calif. obligatory for all Government use. It appears that the Post Office Department was one of the factors instrumental in getting this change, the reason for its interest being a desire to lessen chances of having the abbreviation of California mistaken for that of Colorado, for careless writers often made Cal. and Colo. look much alike.

Agitation for this new form has been under way in California for many years, and so everybody is probably happy.

C. Hart Merriam has been selected Chairman of the Board, succeeding A. Braid, who died about two months ago. Mr. E. A. Sherman of the Forest Service is a member of the Board.

Fire Patrol Responsibility on Private Forests

The Quebec government has introduced a bill to compel holders of licenses to cut timber on Crown lands to patrol their limits. The various fire protective associations feel that there is danger to their protected lands from fires occurring on adjoining lands.

It is proposed to force the holders to establish patrols between May 1 and November 1 each year, by competent fire rangers selected and paid by the individual but appointed by the Minister of Lands and Forests, who may prescribe the number of fire rangers to be employed. The entire time of such men must be given to fire patrol.

Differential Freight Rates in France

An interesting situation has arisen in connection with our export trade in lumber in France. The French freight schedules provide different rates for lumber from non-exotic and exotic species. The rates favor non-exotic species. Under non-exotic are included all species that grow in France, which cover Adriatic, Russian, and Scandinavian species. Most of the American softwoods, such as Douglas fir, white pine, etc., are classed as exotic. Most of the lumber is to be used in the eastern part of France and so it must cross the whole country by rail and pay the higher freight rate, the existence of which works a hardship on American export lumber in competition with that from the European countries.

Government Lumber Stocks

Report has it that the Government departments had 200,000,000 feet of lumber on hand at the signing of the Armistice. It was a matter of great concern to the lumber trade as to how this big amount was to be unloaded on the general market. To meet the situation a contract was made with some brokers to handle this lumber and dispose of it so as not to disturb market conditions. After making the contract the Government solved the riddle very neatly by deciding overnight to retain much of this stock for its own use. Of the original amount only 20 per cent is to be put on the market.

Big Timber Sawing Contest

The winning team in a recent sawing contest held at New Orleans under the auspices of the Southern Pine Association required one minute two and one-fifth seconds to saw a southern pine log thirty inches in diameter.

Wooden Toy Business in England

The manufacture of wooden toys was undertaken by many wood-turning concerns in England during the war, primarily as a stop-gap until ordinary trade could be resumed. In several instances firms that had adopted this course found the new undertaking profitable and consequently will continue to manufacture toys as the principal part of their business.

Wooden Beads

The whims of fashion are coming to the aid of the wood-turning industry. Just now there is a big demand for round and oval beads used mainly in necklaces. As a rule they are sold as being of some marvelous substance, whereas they are simply wood with a coat of enamel or celluloid.

Mailing List for the Bulletin

We have made a cleanup of our mailing list so far as it affects Forest Service employees who became members of the 10th Engineers (Forestry), in view of the return to this country of those units now of the 20th but originally of the 10th regiment.

Only the names of the officers remaining in France on staff or other special duty will be carried on the mailing list from this time on.

We have also removed the names of the former Forest officers who were stationed at Camp Cody, New Mexico. This action is in line with the request of the postmaster at that office who informed us that the office had been discontinued.

Washington Notes

Assistant Forester E. A. Sherman has left Washington for a western trip and we do not expect to see him back for a month or so.

Assistant Forester W. L. Hall made a quick run to New York last week in the interests of Acquisition.

A. H. Cousins, property assistant with headquarters at Ogden, is in Washington preparing schedules and bids for supplies for next year. Mr. Cousins hopes to work out a scheme whereby the rather restricted purchasing power of the Government dollar will not cut the field man short of supplies.

District 2

Arthur H. Carhart has assumed duties as recreation engineer for the Rocky Mountain District. The appointment of Mr. Carhart marks an important step in National Forest policy and gives recognition of the fact that the proper use of the recreational resources of the National Forests is a subject of the utmost importance and one worthy of close study.

The duties of the recreation engineer will be to promote the recreational use of the National Forests and to assist in making them more valuable for that purpose. He will direct the layout of roads, trails, campsites, ranger stations, resorts, and other structures in order to get the most pleasing scenic effects consistent with their primary utilitarian purposes. The recreation engineer will also concern himself with putting into effect sanitary regulations necessary for the continued use of such improvements under healthful conditions. His work will also cover the cooperation with communities, municipalities, and semi-public organizations in directing the proper use of National Forest lands for municipal camps, playgrounds, and sanitariums, and above all bringing home to every one a full understanding of the value and possibilities of the Forests for such recreational uses.

District 2 (continued)

Six and one-half million linear feet of lodgepole pine prop timber located on the Powder House Gulch unit, near Pitkin in the Gunnison National Forest, was recently bid in by A. L. Pearson of Pitkin for 25 cents per hundred linear feet.

In view of the monies which will be made available by new and existing Federal Acts for road and trail work, tentative plans are under way to spend, this season, over a million dollars on road construction in Colorado, Wyoming, and South Dakota. Negotiations have been entered into with the city of Denver for cooperative work on the Mt. Evans road, which has not as yet been completed up to the Pike National Forest boundary. Plans for this season's work call for the construction of this road to a point on Big Chief Mountain in the Pike Forest. A single bid will be called for to cover the construction of the entire road. The city has agreed to allot an amount equal to two-fifths of all sums spent in excess of the $32,000 appropriation which the Forest Service originally promised to expend on this project.

In spite of the shortage of labor, the area actually planted in the District during 1918 exceeded by 100 acres that planted in 1917. No direct seeding work was done on account of the impossibility of getting labor on the Black Hills Forest, and so the total area reforested in 1918 was about 160 acres less than in 1917. A total of 2,438.8 acres was planted.

District 3

Captain R. L. Deering and Master Engineer L. V. Slonaker, of the 20th Engineers (Forestry), are back on their jobs in this District.

'Word has been received of the death on January 22 of former Ranger Jos. M. Daly, after a severe illness of several weeks. Mr. Daly was formerly in charge of the Tumacacori District and has been on leave without pay for some time taking medical treatment in San Francisco for injuries received while on official duty.

Fred Howard, a grazing permittee on the Manzano Forest, was sued for $22.50 damages done by cattle not under permit, with $25.00 punitive damages. Judgment was secured for the $22.50 and costs. Howard failed to settle within a reasonable time, and the United States Marshall has collected a total of $298.45 to cover the judgment and the costs.

A grazing trespass case on the Manzano against James A. Carey involving suit for $336.00 damages was met with a counter-claim against the United States for $1,600.00 damages covering expense in keeping the cattle off the Forest, and injury to the cattle because of the Supervisor's refusal to issue a permit, or fence the Forest. The case was argued Wednesday before Judge Neblett who held that no fence was required, and that there could be no recovery against the Government. The case will later be tried by a jury as to the Government's claim against Mr. Carey.

"A gratifying feature of our work," reports Mr. Hill, "is the favorable sentiment expressed by stockmen using the public range toward the grazing policy on the National Forests. These stockmen fully appreciate the disadvantages of an unregulated range and all are anxious for some system of control which will permit fencing and prevent overstocking with consequent heavy losses whenever a drought occurs."

Mr. Hill and Mr. Wooton expect to complete their investigation of grazing conditions along the Atlantic-Pacific Railway Grant belt extending from Albuquerque to Kingman, Ariz. within a few weeks. Their report is to include recommendations for suitable control measures over the Federal lands involved.

It is reported in press dispatches from Arizona that the Grand Canyon has been crossed for the first time by an aeroplane. Lieuts. Searle and Jones stated, "We made the first flight over the Grand Canyon today. Very cold, scenery wonderful, impossible to describe. Wednesday expect to take moving pictures." In this connection comes the announcement that a training school for aviators will be established at Albuquerque by two former army aviator instructors. The time should not be far distant when Forest Officers shall view with the eyes of a bird the wonderful stretches of mountain country, over which previously they have been accustomed to travel on the hurricane deck of a broncho. The possibilities of aeroplanes for fire detection (and perhaps suppression), for photographic map work and for wireless communication are big.

District 5

It is proposed to establish in the District Office, by rotating detail from the field, a Field Advisory Committee composed of two Supervisors or other field officers on detail to the District Office for periods of about a month each. This Committee will be given necessary clerical and office facilities and will work under the direction of the District Forester on such administrative questions and studies as are referred to them by him. The purposes of the Field Advisory Committee are:

1. To provide a leaven of Forest thought and Forest point of view in the District overhead.

2. To permit the Assistant District Foresters to devote more time and attention to the essentials of their jobs and to provide for them an organization to work out the details of such new plans for field administration or study as may come up.

3. To act as an Advisory Board to the District Forester in matters affecting the field as a whole, with the idea of saving time and lost motion in referring proposed administrative action to the field for comment.

4. To provide systematically for broadening the viewpoint of the Forest Supervisors, and to guard against the evils of the small-town point of view.

District 6

Forest Supervisor Stanton G. Smith, of the Snoqualmie, has resigned to take up private work. Mr. Smith will leave about March 15 for the East, where he becomes manager for the Maine Feldspar Company, of Brunswick, Maine, of their new plant in Rochester, N. Y. Mr. Smith entered the Forest Service in 1904, and he has made a host of friends who wish him success in his new work.

Lieutenant W. H. Gibbons, who recently returned from France with Battalion 12 of the 20th Engineers, was discharged at Camp Lewis this week. He has resumed his work in the District Office.

Lieutenant W. B. Osborne, Jr., has returned to the District Office from Camp Zachary Taylor, where he completed his training as an officer in the Field Artillery.

Carrier pigeons will assist in protecting the National Forests of Oregon and Washington from fire if experiments inaugurated in this District prove successful. Forest Examiner W. J. Sproat, of the Deschutes, who is on detail in the District Office, is familiar with the use of pigeons and believes they can be adapted to carrying fire news quickly from the field to ranger stations or other points. The matter has been discussed in the District Office and a decision reached to try out the birds on several Forests. Mr. Sproat will take two pairs of pigeons back to Bend for use on the Deschutes, and Supervisor Seitz plans to try them out on the Cascade also.

Forest Examiner R. S. Wallace, of the Cascade, arrived in the District Office this week for a short detail.

Eugene Newman, of Shaniko, Oregon, plead guilty to the charge of fire trespass on the Santiam before federal judge Wolverton on February 24 and was fined $25.00, which was immediately paid. Mr. Newman, who was in charge of a band of sheep, started fires about his camp to hold the sheep together, and left the next day without putting out the fire.

Reports of lumber cut for mills in Oregon and Washington for 1918 show a slight decrease from the cut in 1917 for the same mills. One hundred sixteen Oregon mills reported 2,115,676,000 B. F. cut in 1918, which is 33,208,000 less than the reported cut of the same mills for 1917. Two hundred five Washington mills reported 3,383,312,000 B. F. cut in 1918, a decrease of 121,598,000 feet from the 1917 reports. Practically all of the larger mills of the District have reported.

District 6 (Continued)

Two hours and twenty-five minutes from report of fire to close of trespass case is a record hung up by the Wenatchee last summer. The sequence of events follows:

Date: July 14, 1918.

2 P. M.	Fire discovered and reported by Lookout Marble from Tumwater Lookout;
2:10 P. M.	Fireman Pobst started for fire, traveling five miles by auto;
2:30 P. M.	Arrived at fire and found E. E. Caldwell burning brush without a permit;
3:30 P. M.	Extinguished fire, which covered one acre;
4:00 P. M.	Brought trespasser to Supervisor and was referred to Justice of Peace J. C. Davis, at Leavenworth;
4:25 P. M.	Caldwell pleaded guilty, was fined, and case closed.

Elapsed time: Two hours, twenty-five minutes.

A demand was recently made upon the Wind River Lumber Company for damages resulting from a fire on the Columbia National Forest for which the Company was responsible, the amount of the damage being $129.01. The Company has made settlement in full on the first demand.

Advertisement for bids for five-year grazing leases along the shores of Crystal Creek, a tributary of Upper Klamath Lake near its northern end, are being published at the instance of the Reclamation Service. About 2,500 acres of land are involved. None of this land will be let for less than 50 cents per acre. The five-year period ends December 31, 1924.

The Snoqualmie force had a novel experience during the strike which lasted from February 6 to 11 when union labor in Seattle attempted to tie the city up tight by means of a general strike in sympathy with shipyard workers who had previously struck for higher wages. The street cars were tied up during the first three days, but the office force managed to get back and forth by means of automobiles. All union restaurants were closed so that Mr. Hurt and Mr. Bruckart, who were in the office on temporary detail, had trouble in getting enough to eat. The sympathetic strike was called off on the 11th, and the force returned to normal, relieved of the necessity of speculating as to what was going to happen and running out to pick up Union Record bulletins, as we were without our regular newspapers for the first two days. The shipyard strike is still in effect.

WEEKLY BULLETIN

Forest Service - Washington Office

(Not for publication)

March 17, 1919.

War Work of the Forest Service Women

In March, 1917, the women of the Washington office of the Forest Service organized for possible war work. A meeting was held, at which over 100 of the approximately 125 in the office pledged themselves for work. Eighty-six joined the Red Cross immediately.

A class of 27 took the Red Cross course in first aid in April and May, 1917. In April of the same year a class in the making of surgical dressings was formed. Twenty-five women took this course, nearly all of them graduating and receiving certificates from the Red Cross. Six qualified as Red Cross instructors in surgical dressings.

Upon the organization by the War Department of the 10th Engineers (Forest) in the summer of 1917, the Forest Service prepared to undertake the welfare work on behalf of this regiment. Later, when the 20th Engineers (Forest) was formed, the welfare work was for both regiments. A fund was started to which many contributions totaling $4,274.68 were made by members of the Forest Service (Washington Office, Madison Laboratory, and seven Districts).

Out of this fund there were purchased two ambulances, at a total cost of $2,836.59, for the Forest Regiments, and a photo-developing outfit. The remainder was used for the purchase of wool for making knitted garments, and the women's organization took up actively the making of these garments. The organization was shortly extended to include the women in the Madison and District offices. In addition to helping substantially with the knitting, the women of the Laboratory and the six western Districts did a large amount of other war work--surgical dressings, garment making, etc.,--not included in the totals given in this statement.

Through contributions from the "Welfare Fund for Lumbermen and Foresters in War Service" the fund for the purchase of wool was largely augmented. The total number of knitted garments made is shown below. Most of these garments were made by Forest Service women (including members of the Districts and the Madison Laboratory), but a fairly large portion of what was given to the 10th and 20th Engineers came from the Department of Agriculture War Relief Association.

Statement of Knitted Garments Distributed by Forest Service
in War Relief Work, 1917-1919

To	Sweaters	Socks Prs.	Scarfs	Helmets	Wristlets Prs.	Totals
Tenth Engineers	95	288		8	18	409
Twentieth Engineers	1,718		87	132	506	2,443
A Regiment of Regulars (through the Department)	200					200
Sixtieth Engineers	100		2	14	27	143
Camps Humphreys & Meade	55	50	1	7	2	115
Sailors	60	120				180
St. Elizabeth's (Shell-shocked soldiers)	40	310				350
Serbian Relief Committee of America	47	751	4	12	14	828
Totals	2,315	1,519	94	173	567	4,668

In November, 1917, when the Department of Agriculture War Relief Association and Red Cross Auxiliary was formed, the Forest Service women in Washington joined this Association and worked with it. Members of the Washington office (both men and women) pledged and made contributions monthly or semi-monthly to this Association from November, 1917, until November, 1918. A room on the first floor of the Atlantic Building was fitted up for surgical dressings work (several acting as instructors) from December 1, 1917, until November 14, 1918, holding 68 meetings on Thursday afternoons from 4:30 to 6, and making 6,769 separate dressings. In addition, 56 pillow cases and 14 pillows were made for Walter Reed Hospital, and 2,061 hospital, refugee, and baby garments were made for the Red Cross. Three hundred scrap books were made and distributed through the American Library Association.

During the summer of 1918 assistance was given in the picking of fruit from the Arlington Farms and in the canning and preserving of this fruit for the use of the wounded soldiers at Walter Reed Hospital. When the first epidemic of Spanish influenza was at its height in the army camps last fall, 4 volunteers went to Camp Humphreys and assisted in nursing the sick soldiers. In November, 1918, 283 Christmas boxes were packed for men of the 20th Engineers, in France. The money for these boxes was furnished by the Welfare Fund for Lumbermen and Foresters in War Service, but all the work--purchasing of articles, packing, etc.--was done by Forest Service women.

Fourteen French orphans are supported by the Washington Office of the Service, by contributions from both men and women.

Spruce, Walnut, and Black Locust in War Times

The war brought out the fact that there was great need for comprehensive specific information concerning the timber resources of the United States. This was particularly true in respect to the local occurrence of timber, its ownership, the percentage of specific grades of lumber which it could be expected to produce, the lengths in which it could be obtained, the extent to which production might be increased by existing lumber operators, and several other kindred subjects of vital importance to any branch of the War Department whose needs for timber might increase by leaps and bounds. Foreseeing the probable need for information of this character, the Forest Service undertook to collect and assemble it for the most important timber trees likely to be needed in the war program.

Spruce and Spruce Substitutes

The very exact requirements for light, strong, easily worked wood with which to build the framework of airplanes are best fulfilled by spruce, and up until comparatively recently Sitka spruce has been the only wood used to any extent for this purpose. The bulk of our supply of Sitka Spruce is, however, confined to a rather limited area in the Pacific Northwest, and moreover suitable material of this species could not be produced fast enough to meet the increasing needs of our Government and of our Allies. It was therefore evident that it would be necessary to supplement the supply of Sitka spruce with other woods: first, the eastern red and white spruces, and then, if the situation became critical, with other woods which, while possibly not quite so desirable in all respects as the spruce, could nevertheless be substituted for it with satisfactory results.

A very comprehensive study was made of the eastern red spruce, which facilitated its use by the Navy for airplane construction. In addition, the supplies and grades of western white pine, sugar pine, Port Orford cedar, Douglas fir, incense cedar, redwood, cypress, western hemlock, and the true firs (silver, noble, white, and lowland) were investigated, and reports prepared and furnished to the War and Navy Departments.

The eastern white and Norway pines and yellow poplar, which were the most promising eastern species, were covered in considerable detail by field studies. Purchases were made of a number of these substitutes by the Allies and the United States. The entire output of Port Orford cedar and Douglas fir suitable for aircraft was commandeered by the Aircraft Production Board. Western white pine and yellow poplar were used to some extent. The investigations indicated that the air program did not need to lag because of any shortage of wood materials.

Black Walnut and Black Walnut Substitutes

Black walnut was of prime importance in the aircraft program for the construction of propellers. In fact this wood is so essential for propellers and gunstocks that it has been appropriately called the "Liberty Tree." That its value was appreciated by the German government is attested by the fact that large quantities of it were exported to that country in the years immediately preceding the war. A few of the reasons why walnut is the preferred wood for these purposes are moderate shrinkage and warping in seasoning, ability to hold its shape after seasoning, strength without excessive weight, ability to stand shock well without injury, to take glue well (for propellers), to take a good finish (for gunstocks), and to hold metal parts with little wear, and resistance to shattering by shot.

The chief substitutes for walnut are birch for gunstocks and mahogany for propellers. White oak has been used to a slight extent for the latter purpose but at the time of the war had not had sufficient trial to justify its extensive use. Information was collected and compiled which indicated an abundance of both birch and oak for the purposes mentioned. Because of the restricted shipping facilities, the amount of mahogany that could be imported during the war was limited. There was accordingly an unusual demand for walnut. Its production was considerably increased after the United States entered the war, amounting perhaps during our participation in the war to about one-fifth of the total standing walnut in the country, or approximately 200,000,000 feet.

The Forest Service assisted the War Department in its campaign to stimulate the production of walnut for war uses. Several men were maintained in the field looking up supplies of lumber and recommending firms for Government contracts. Detailed studies were made of the methods of manufacture, with a resulting increased efficiency. As a concrete result of this work it is estimated that the daily production of gunstocks was in one region increased 3,000 per cent by the activities of one of these agents. These men are at present assisting the Ordnance Department in the adjusting of contracts entered into for black walnut which, on account of the cessation of the war, is no longer needed.

At the request of the War Industries Board and War Department, the Forest Service cooperated with the Boy Scouts in conducting an organized search for black walnut as requested by President Wilson. About 20 million feet were uncovered in this campaign.

Black Locust for Treenails in the Shipbuilding Program

Treenails are wooden pins used to hold the framework of a ship together. Those of black locust are the best. Before the war very few of these treenails were used each year, since the building of wooden ships was practically at a standstill. Three or four manufacturers, perhaps, were engaged in the industry in a small way. The total pre-war demand was probably well under 300,000 treenails a year. With the sudden development of the wooden-ship program there arose the necessity for large quantities of treenails varying from 24 to 48 inches in length. The requirements for the year 1918 were between 5 and 10 million.

The type of manufacturers in the treenail industry and the immense demand for their product made it seem probable that the wooden shipbuilding program might be delayed because of a lack of treenails. A study was undertaken, accordingly, to determine the probabilities in this respect, to suggest remedies, and to throw any light upon a situation which busy officials of the Emergency Fleet Corporation had not the time to investigate. As a result of this study the conclusion was reached that the supply of locust timber in the country was ample for all possible requirements; that the plant capacity of manufacturers of treenails was also ample to meet any demand; that it would be practicable to stimulate the production of locust bolt wood to any required degree; and that failure to obtain adequate supplies of treenails would be due to inadequate production of locust bolts and logs rather than to any other cause.

Very helpful information was secured concerning the number of treenails needed for a ship, concerning which there had previously been little definite record. It was found that about 58,000 are necessary for a Ferris ship and that the greatest number (10,650) were of the 32" length. The number varied from 1,400 of the 24", the shortest length, to 3,630 of the 48", the longest length.

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The Pine Forest in the Landes

In the short space of seventy years 2½ million acres of barren waste in the Landes of Gascony have been changed into a valuable forest. At present the recently cut-over land is worth ten dollars per acre and timber almost mature in fifty years is worth as much as $500 per acre.

In the same time the population has increased from 70,000 to 300,000 and the Department of the Landes which was the poorest department in France has become the richest.

At the end of the eighteenth century the Landes consisted of a vast sand waste, supporting only a scanty vegetation of small plants, with occasional islands of short, bushy maritime pine.

In winter--the rainy season--the entire country was a series of lakes and marshes, while in summer the hot sun dried up the scanty vegetation and made the land a desert.

An attempt was made to colonize this country as early as 1610, when Henry IV welcomed 45,000 Moors expelled from Spain. They failed to make a living and soon departed for Africa.

In 1801 a plan for reforestation was formulated and the work was inaugurated with great ceremony at the mouth of the Gironde River. The work continued from this time and by 1860 about 102,000 hectares (one hectare equals 2.47 acres) were covered at a cost of 10,000,000 francs.

Napoleon III bought in 1860 a block of 7,400 hectares and began to plant this area as an example for others. In six years the land was drained; 7,000 hectares were sown with pine; two nurseries for young trees were started; and 400 hectares were placed under cultivation to raise food for the laborers and the necessary buildings were constructed to house them.

The usual method employed in planting in the Landes was to sow the pine seed broadcast mixed with either genêt seed or that of gorse, after the brush had been burned to prevent smothering of the seedlings.

Appalachian Mountain Club to go to Mt. Mitchell

Tentative plans are under way by the members of the Appalachian Mountain Club for a trip to Mt. Mitchell and Asheville, North Carolina, some time the latter part of May.

The start will be made from Boston and it is planned to make a stopover at Washington, and possibly at Richmond.

The plan includes three days on Mt. Mitchell, with an excursion to some of the neighboring mountain tops, and three days in Asheville with excursions to the famous Biltmore forests. Registrations for the trip are being made at present.

Cooperative Trail Work in the White Mountain Forest

Effective cooperation in the location and maintenance of trails in New England seems to be provided for by the action of the New England Trail Conference at its meeting last December. This action is of particular interest to the Forest Service because it affects trail work on the White Mountain National Forest. The resolutions adopted were as follows:

1. Whenever the development of any unit in the proposed system of New England trunk trails is undertaken, it is desired that plans of the same be submitted to the Trail Conference, accompanied if possible by a map of the route. This is not for confirmation, as no power of dictation is assumed by the Conference, but merely that information may be exchanged in the interest of coordinated effort.

2. All organizations or individuals making themselves responsible for trails crossing portions of the White Mountain National Forest or of any other publicly owned forest or reservation wherever located should be careful to recognize the custodianship and to obtain the sanction of such authorities before undertaking new construction or radical relocation within such properties.

3. Constituent organizations should exert their influence to discourage the construction of trails in any locality unless assurances can be secured from some responsible individual or organization that such trails will be suitably maintained.

New Forestry Laws in Western Australia

Several striking features are to be found in recent legislation in western Australia.

The Forest Department is removed from the Department of Lands to the Department of Mines, on the theory that the minister in charge of lands will be under constant temptation to make lands available and will shrink from creating permanent forest reserves, whereas the minister of mines, having no specific interest in land administration, will act unrestrainedly on the advice of the conservator of forests.

The conservator of forests is placed in office for seven years, removable only by a vote of both the lower and upper chambers of the legislature. He is given all powers of a commissioner over all West Australia forests, now estimated at 3,000,000 acres, of which 1,300,000 acres have been cut over and 1,500,000 acres are under lease.

The conservator is furnished with a definite source of revenue, without the necessity of each year going before the legislature, in that one-half the forest revenue is each year set aside for forest work under his direction. This will amount to about $135,000 annually, as compared with about $60,000 expended in 1914-15.

Provision is also made for the conservator to examine the forest lands of the state and to set aside as permanent reserves those lands most fitted for this purpose.

Working plans are to be prepared for the reserves and if accepted by the cabinet are to have the force of law for ten years. The sleeper hewers are to be abolished from the state forests on account of their wasteful operating methods.

The act further provides for the regeneration of damaged forest areas by protection and silvicultural operations, and plantations are to be established to grow at home the $400,000 worth of softwoods that are now annually imported.

Wood Pulp in Sweden

Shipments of wood pulp from Sweden to Germany, which were stopped by the British blockade in the Baltic, have been resumed, according to the report made by the U. S. Commercial Attache at Copenhagen, Denmark. Special efforts were made early last winter to exhaust the stocks in Norrland before winter navigation was stopped.

Shipments of dry pulp from Goteborg to France and England have been very large, and the stocks are almost exhausted. The price is 300 to 315 crowns (the normal exchange value of the crown is $.26) per metric ton f.o.b., Goteborg.

Lumber Shortage in Italy

There has been a great shortage of lumber during the entire period of Italy's participation in the war, according to a report submitted by Consul General David F. Wilber, at Genoa. Switzerland has furnished about 75 per cent of the imports of rough-hewn lumber and about 80 per cent of the squared or lengthwise sawn; the United States supplied about 12 per cent of the latter. It should be stated that the arrivals of squared timber, which were in 1914 no less than 960,705 tons, diminished in 1915-1917 to an average under 250,000 tons.

The scarcity and high price of fuel led to a serious cutting down of the olive trees, thereby injuring one of Italy's greatest export industries, that of olive oil, especially in Liguria. Though the cutting has now stopped, it is feare that the damage will not be easily repaired.

There should be pitch-pine lumber needed for construction purposes following the partial suspension of building operations, but at present new enterpris halts, owing to the unsettled conditions.

Protection Forests in Australia

The maintenance of forests on watersheds in Australia was discussed at the recent Interstate Forestry Conference held in Australia and the following resolution was made a record as the opinion of the Conference:

1. That owing to the irregular rainfall of many parts of Australia, the preservation under permanent forest cover of all high mountain ranges, which form the sources of streams and springs, is a subject of the first national importance.

2. That as forests govern water supply, preventing erosion with the deposit of large bodies of silt and gravel on lower agricultural lands, moderating floods, and maintaining in periods of drought regular streamflow, thus providing continuous supplies of water for storage and irrigation, it is the opinion of the Conference that all high ranges which are still Crown lands should be dedicated as permanent forests, strictly maintained under forest cover, and controlled under forest law.

Will Return Empty Barrels

The Bureau of Fisheries has made arrangements with the wholesale dealers in furs in St. Louis for the return of empty barrels in which sealskins have been shipped from the Pribiloff Islands, and which heretofore have been sold at St. Louis. It is figured that the cost of knocking down a barrel and preparing it for shipment will be 50 cents, to which 23 cents will be added for freight to Seattle, and 725 barrels can be shipped in one car. The cost of new barrels at Seattle has advanced to $3.45 each. The saving by the new plan is at once apparent.

Reject Bids for Spruce Corporation Equipment

The U. S. Spruce Production Board is reported to have rejected practically all of the 7,500 bids which it received for the purchase of the large amount of machinery, equipment, and supplies, which it has been offering for sale. The bids were rejected because they were considered too low.

The Board has about $10,000,000 worth of equipment it is anxious to get rid of.

Standardization of Express Shipments

To have an airplane on hand and not to know what to do with it is the reported experience of the United States Railway Express Company. It appears that an airplane lost its address label after it got started on its journey and it has been impossible to make the delivery.

Express officials state that shippers are very careless in wrapping and addressing packages for shipment and that the annual loss runs very high.

Advantage is being taken of the present railroad control to formulate standard instructions for packing, wrapping, crating, and address labels. The Forest Service has been called in on this work and many data are already on hand as a result of the work done at the Laboratory along other lines, but which will be of value in this connection.

A number of representatives of the express administration are to make a trip to the Laboratory to witness some of the experiments and get first-hand information on the equipment.

Timber Sales Receipts for Eight Months

From July 1, 1918 to March 31, 1919.

District No.	Receipts	Compared with Fiscal Year 1918 Amount ±	Per cent ±
6	$232,971.91	- $24,900	- 9½
1	203,820.88	+ 13,500	+ 7
2	135,904.94	- 24,100	-13
3	130,244.79	- 43,500	-25
5	102,696.05	- 51,100	-33
7	74,732.18	+ 30,400	+ 68
4	45,685.46	- 3,100	- 6
Total	$926,056.21	-$101,706.94	-10%

Total for February, 1919, ... $ 88,000
" " " 1918 69,000
Increase for month . . . . $ 19,000

Washington Notes

R. F. Hammatt, in charge of Information work in San Francisco, is in Washington on a short detail.

O. M. Butler, assistant director of the Forest Products Laboratory, is in town for a few days.

District 1

U. S. Swartz is estimating and making an appraisal of the timber on Mill Creek on the Absaroka Forest to determine whether it should be held and sold as a unit or disposed of in small sales. Upon the completion of this job, Mr. Swartz will go to the Flathead where he will, in company with Messrs. Webb, Woesner, Baird, and Drake, make an estimate and appraisal of the timber in connection with a proposed mill site at Egan. It is thought that there is enough timber available to run a mill 15 or 20 years.

Fifteen applicants participated in the recent examination for lumbermen held in the District.

Examination for scaler will be held at Spokane, Missoula, and Kalispell on April 16 and 17.

The Boy Scouts movement is well supported by members of the Forest Service in Missoula. R. H. Rutledge is chairman of the council, with Major Fenn and P. J. O'Brien members. Messrs. Swan, Swim, Redlingshofer, and Porter are scout officials. J. F. Preston, R. B. Adams, and J. W. Girard are scheduled for special work with the troops.

A closed season for brush burning and provision for a permit system is in force in Montana as a result of recent legislation. Slash must be burned within two years after the date of cutting and in accordance with the provisions of the permit law.

Weed control by the use of chemicals is being experimented with at the Savenac Nursery. Weeding by hand is an expensive method and F. C. Kitchin is trying to work out some less expensive method by the use of chemicals. So far the most satisfactory results have been given by the use of one-half ounce of zinc chloride per square foot. The experiments will be continued until determination has been made of the cheapest and best method of eradication.

Geo. A. Roosevelt, of the Biological Survey, was a recent caller at the District Office to secure the cooperation of the Forest Service in the squirrel eradication campaign about to be inaugurated on and adjacent to some of the Forests. This work is of particular importance on the Bitterroot and the Helena.

District 1 (continued)

H. G. Ade, who has been on war detail at Seaside, Oregon, has returned to duty.

W. L. Lay, formerly clerk on the Custer and more recently with the Marine Band at Mare Island, Calif., has returned to duty and is now temporarily in the District office.

The Commissioners of Missoula County have expressed themselves as being willing to acquire a right of way for an automobile road across private lands to lead to Seeley Lake. The decision is the result of a conference of Messrs. P. J. O'Brien and Rutledge Parker with the Commissioners.

In the rifle match recently held between the Forest Service team for District 1 and the Anaconda team, the Forest Service representatives won at 300 and 500 yards and the Anaconda team at 600 yards. The shooting was all slow fire. The Forest Service team consisted of Thieme, Parker, Urbanowicz, Swim, Whitney, and Rutledge.

W. M. Nagel, after many peregrinations while in the military service, is back on the job in Planting. Mr. Nagel on his entry into the army went to St. Louis, then to regimental headquarters at Washington, D. C., then, as instructor in topography, to the engineering school at Camp Humphreys, Va., where he remained five months. In the middle of December he was sent to Pensacola, Fla., to do coast defense mapping, and was finally discharged at Camp Sheridan, Ala.

W. M. Rush and A. H. Larson, rangers, are expected back from military duty at an early date for duty in this District.

District 2

Assistant Forester E. A. Sherman, en route to Albuquerque, stopped off in Denver for a few days.

District Forester Smith Riley has returned to Denver from a field trip in the Jackson Hole country. Mr. Riley reports that weather and snow conditions in that region are excellent and that the Jackson Hole elk are in fine shape.

Assistant District Forester J. H. Hatton attended the annual meeting of the Big Horn Basin Wool Growers' Association held at Cody, Wyoming.

More than 1,700 signs were turned out for use on the National Forests of the District by the Sign Shop which has been running in Denver during the past few winter months and closed on March 1.

Losses of cattle and sheep have been quite heavy in southwest Colorado on account of the unusually severe weather and snow conditions this winter. If spring does not break early this year there will probably be further heavy losses.

A can of red pine seed collected in 1910 was recently found hidden away in a ranger station on the Minnesota National Forest. A test at the Fremont Experiment Station shows that the seed has a germinative energy of 93 per cent.

Trees grown at the Monument Nursery from Engelmann spruce seed collected on the Santa Fe Forest in District 3 make much better growth in the nursery than similar stock produced from seed collected in northern Colorado. Consequently, District 3 seed has been in demand, but District 2 is planning to test spruce seed from the southern Forests in its own territory in the hope of securing equally good results.

District 3

Cavalry horses, in excess of the army's peace-time needs, are being auctioned off at Camp Cody, New Mexico. Prime saddle horses weighing from 900 to 1,100 pounds were sold at a recent sale for $45.00 each. Forest officers on the Santa Fe are getting interested and may buy some.

Requisitions for about 700,000 fish have been submitted by the Taos Game and Fish Protective Association in cooperation with the Supervisor of the Carson Forest.

District Fiscal Agent Albert Morris and Mrs. Morris were seriously injured in an automobile accident. Latest reports indicate that Mr. and Mrs. Morris are getting along nicely and are now out of danger. The accident was occasioned by Mr. Morris' effort to avoid a collision with another machine.

T. A. Gray, a cattleman of Carlsbad, reports having seen two eagles kill a young calf and later an eagle attacking another calf. The eagle was frightened off in the latter instance.

D. A. McCollaum, a stockman of Queen, New Mexico, reports having seen three eagles kill a two-year-old doe. Mr. McCollaum also states that eagles often kill his goats and calves and that he has seen the carcasses of mountain sheep the eagles had killed.

H. B. Ricketts, Clerk, District Office, has returned to Albuquerque from duty in France with the 20th Engineers. He states that Ranger C. H. Riblett of the Coconino, Ranger R. W. Hussey and Packer Jas. Hudson of the Gila have been discharged from the army and have gone to visit their relatives.

The District Forester has approved the range rules submitted by the Advisory Boards of the Greer Community Cattle and Horse Association, the Springerville Livestock Association, and the Sheep Springs Cattle and Horse Growers' Association, all on the Greer Ranger District of the Apache National Forest. The wording of all these rules is practically the same, and provides:

That bulls be kept off the range from April 1 to August 1; that the Advisory Boards may decide when, where and how range improvements will be constructed under Regulation G-4 without referring the matter to the association for a vote; that roundups will be called and directed by the foreman appointed by the Advisory Board and all permittees required to be adequately represented and pay their pro rata assessment of the costs of the roundups; and that the permittees must pay their pro rata assessment of salt to the Association salt boss who puts it on the range. Another special rule submitted by the Greer Association and approved by the District Forester provides that the Advisory Board will hire range riders, and run the cattle as if they belonged to one outfit. The costs are assessed equally on permitted stock, under the provisions of Regulation G-3.

WEEKLY BULLETIN

Forest Service - Washington Office

(Not for publication)

March 24, 1919.

Arbor Day

Observance of Arbor Day by the planting of trees dedicated to those whose lives were sacrificed in the war is advocated by the Secretary of Agriculture in a letter to the Governors of the States, as follows:

"The observance of Arbor Day began soon after the Civil War. A distinguished citizen of Nebraska, who later became Secretary of Agriculture, was the prime mover in securing its recognition within his State, where it first took root; and the Board of Agriculture of that State, on his motion, designated the first Arbor Day. From the beginning it has had a civic motive and an association of patriotism.

Another and greater war has come to its inevitable conclusion. The cause of righteousness, of liberty, of all that Americans hold dear has prevailed. We shall seek many ways to perpetuate the memory of those who made the great sacrifice. The memorials will take many forms. The names of those who have fallen will be perpetuated by costly monuments and inscribed on enduring tablets. Great works that serve the needs of peace also will doubtless be dedicated to them.

But along with these memorials, we can easily discover ways in which we may simply and spontaneously pay our tribute to them. We can keep fresh our memory of what they gave; and we can perpetuate their names in familiar places. It has been happily suggested that we may do this by adorning with young trees, each named for a fallen soldier, our waysides, our yards, and our pleasure places. And in most of our States Arbor Day is at hand. This year we may give to that day a meaning more profound, a purpose more exalted, yet also an association more personal.

I conceive that, if the origin of the day be borne in mind, the invitation to our fellow citizens to join in making it a day 'especially set apart and consecrated for tree planting' may appropriately come from this department. I take the liberty, therefore, of suggesting that you commend to the citizens of your State, and particularly to those in attendance upon its schools, such an observance of Arbor Day as will secure a widespread planting of trees, dedicated to those whose lives have been sacrificed in the great struggle to preserve American rights and the civilization of the world."

Forestry Legislation in Michigan

The planting of ornamental and memorial trees along the highways in Michigan under the direction of the forestry department of the Michigan Agricultural College is provided for in a bill recently introduced in the State legislature.

Another bill provides for the extension of the territory under the jurisdiction of the forest fire department to include such areas in eleven counties of the State as may need forest fire protection. This action is taken because of the need of protection for the young stands and cut-over timberlands in those counties. If this bill is passed it will extend the region under the jurisdiction of the department considerably.

An amendment in the forest fire law is proposed which will require that persons setting fire for the purpose of clearing land between April 1 and December 1 must first obtain a permit from the State Game, Fish, and Forest Fire Commission, or from a deputy, or from supervisors of the township, when and wherever contiguous timber, slash, debris, or other combustible material liable to ignition exists on land adjoining that which is being cleared. Failure to do so is made a misdemeanor and punishable on conviction by a fine of not less than $5 nor more than $100, or by imprisonment in the county jail for thirty days, or by both fine and imprisonment. It is hoped that this will make the present law effective.

Need of Private Forestry in Ohio

There seems to be a need for private forestry in Ohio, judging by an advertisement for the sale of timber on 21 acres in Henry County. The owner indicates that the timber must be removed "sleek and clean" except for the stumps. The timber is advertised to consist of a stand of red oak, burr oak, elm, linden, gum, yellow poplar, etc. Apparently the owner intends to hold on to the land and his interest is merely to get rid of the timber.

Carrier Pigeons for Fire Protection

Carrier pigeons used in fire protection on the Forests in Oregon and Washington is the latest. Forest Examiner W. J. Sproat will inaugurate the experiment on the Deschutes Forest. He has five pairs of birds. Similar experiments will be tried on the Cascade. The plan is to use the pigeons as a means of communication in emergencies and for carrying fire reports.

Forestry Exhibit Starts for France

The American overseas army will soon find forestry exhibits in some of the Y. M. C. A. huts in France. Four special collections of models, bromides, etc., have been made up as part of the Department of Agriculture exhibits to be shown in cooperation with the Y. M. C. A., and these are being loaded on the steamer this week.

C. A. Lindstrom is the Forest Service representative and will be in charge of one of the four circuits to be covered by the Department exhibits.

The purpose of the work is to help in the back-to-the-soil movement and to give the soldiers an opportunity to learn something of the various phases of farming and forestry. The Forest Service exhibits show farm forestry, fire protection, erosion, windbreaks, and post treating.

Claims for Lost Equipment Disallowed

Lightning struck the barn at the headquarters station of Ranger Bert A. Goodman, of the Helena Forest, Montana, and from the resulting fire the equipment of bridle, saddle, saddle blanket, etc., was destroyed. Claim for $58 was presented by Ranger Goodman, but disallowed on the basis that the equipment was not in actual use at the time of loss and so the claim did not come in under the legislative provision for reimbursement for equipment under hire to the government.

This decision follows the principle previously laid down in the case where claim was made but disallowed in the loss of horse owned by a Forest ranger and killed while in the station pasture. Not being in actual use no claim was paid because it is held that the Government act of hiring is only at the time the horse is in actual use.

Cascara Stumpage

Cascara bark stumpage on 800 acres in the Siuslaw is being advertised. It is estimated that the yield will aggregate 20,000 pounds of dry cascara bark. The upset price is three cents, being based on the current price paid last year on several small sales.

Pealing of cascara bark is a home industry on the Siuslaw and is as a rule done by the settler with the help of members of his family. Many small sales aggregating thousands of pounds, are made annually on the Siuslaw.

Money in Pure Bred Cattle

Occasionally the question is raised by cattlemen using the National Forest ranges of whether the Forest Service policy of advocating pure-bred cattle is a wise one. An answer is to be found in the experience of two owners in Utah. It was shown that well-bred cattle will make good when placed in competition with scrubs and grazed entirely on range grasses and forage.

Two neighbors using similar range in a Utah Forest owned about the same number of cattle and wintered them partly on open public domain ranges supplemented with some roughage near spring. The two herds then entered the Forest ranges for the summer season at about the same time, stayed on during the summer, and were then shipped to Omaha on the same train and sold under identical conditions. Both bunches were fat. The pure-breds--well-bred Herefords--brought $2 per cwt. more in cash than their scrubby brethren, averaged 200 pounds more in weight, and netted the owner $40 per head more than the scrubs.

Hides and Skins in United States

Stocks of hides and skins in the United States on December 31, 1918, are reported to have been as follows: Cattle hides, both domestic and foreign, amounted to 6,398,234 pieces; sheep and lamb skins totaled 14,132,229; pig skins, 260,461 pieces, and 1,440,961 pounds of strips. Horse hides, including fronts, butts, and shanks, amounted to 401,613 pieces; and calf and kipskins, 2,199,266 pieces.

Other skins reported are: Kangaroo and wallaby, 350,900 pieces; deer and elk, 241,147; goat skins, 7,043,039; kid, 329,780; and cabretta, 923,437 pieces. A total of 47,077 Buffalo hides were reported in stock of which 41,538 were heavy pieces. The report covers both domestic and foreign hides in raw stock and represents holdings of 1,856 concerns. There were 673 other firms who held no raw stocks.

A Woodland Park as War Memorial

Eighty acres of virgin soil, much of it covered with timber, has been offered Michigan City, Indiana, for a war memorial park by Martin T. Krueger, former Mayor of the city. The proposal was made to the Chamber of Commerce of the city, and was unanimously accepted.

In writing of the park former Mayor Krueger said: "This land is beautifully located; its virgin soil has never been touched by spade or plow, and is covered by a growth of white pine, white, red and yellow oak, maple, sycamore, poplar, cherry, elm and basswood, and thickly set in spots with flowering shrubs, as dogwood and witch-hazel, and festooned with great spreading and sprawling grapevines. The land is rolling, well drained and free from every objectionable growth or feature."

More About Eagles

Supervisor Arthur of the Lincoln received the following contribution from a resident of his Forest:

"I have seen eagles eating on young antelopes and young deer, and have found young calves with places on their backs where I think eagles have caught them. I know that they can kill sheep and goats, as I found an eagle nest with two young eagles in it and there was part of a hog and several bones in the nest. I think they kill lots of young animals."

National Rifle Matches in August

The National Rifle Matches will be conducted this year by the Navy Department and will be held in August at a range to be announced later.

The matches are competitions wherein soldiers, sailors, marines, and civilians compete for national marksmanship honors, and have been staged at frequent intervals during the past decade. They are the means of determining the national rifle and pistol championships.

Usually about 50 or more teams enter the competitions, representing the services, national guard and civilian organizations, colleges, military schools, and many hundreds of individual marksmen. This year more than 100 teams are expected to compete.

Standard Grades for Oats

Official standards for oats under the United States Grain Standards Act have been established by the Secretary of Agriculture, effective June 16, 1919, when the new-crop movement begins. After that time all oats moving in interstate commerce will be graded according to these Federal standards by licensed inspectors whose work will be supervised by the Department of Agriculture.

The new standards for oats provide for four numbered grades and a sample grade, the factors used for grading being: test weight per bushel; minimum percentages for sound cultivated oats; and minimum requirements for heat damaged oats or other grains, foreign material, wild oats, and oats of other colors. No provision is made in the new standards for dockage, but it is said to be not at all unlikely that they will be placed on a dockage basis at some future date.

Paper Soles

Paper soles can be made just as durable and waterproof as the best leather soles by the following process: Soak about 30 sheets of paper in oil of turpentine, and then glue together with the following composition: oil of turpentine, Spanish wire, resinous lac, and linseed oil to which some litharge or protoxide of lead has been added. After being glued together, the packet of paper sheets is put under strong pressure, by which means a strong sheet of cardboard is obtained. The sheet is smoothed and trimmed, and then cut to shape, and makes an excellent substitute for a leather sole.

Paper from Rice Straw

Egypt produces rice-straw, papyrus, and other fibers which might well serve for the manufacture of paper. Experiments have been made with rice-straw, and one variety of papyrus, called Bourdy, which grows on a large scale in the lake district of the Delta. No useful result has been obtained with the latter, which it appears does not possess the qualities necessary for paper making.

As regards rice-straw, the experiments have been more satisfactory, and some good, practical results might be obtained. Egypt imported before the war annually about 25,000 tons of paper of all varieties. The quantity of rice-straw available is very considerable, some 250,000 to 300,000 feddens, producing 350,000 tons of rice, are annually cultivated, but the whole question is a highly technical one and requires very deep and extensive inquiry. It is understood that the matter is receiving the close attention of the Anglo-Egyptian authorities in all its aspects. There already exists a paper factory in Alexandria.

Community Work in District 3

The participation of the Forest Officers of District 3 in community activities was brought out at the recent Supervisors' meetings. Assistance was rendered communities in connection with Liberty Bond campaigns, Red Cross work Armenian relief work, catching slackers, assisting registration boards, determining priority discharges, combating the flu epidemic, and doing the work of Four Minute Men, members of the legal advisory boards, and helpers of draftees at registration. Assistance was given in organizing cattlemen and bankers to purchase cattle food for starving cattle. In municipal matters, assistance was given in tree planting and in drawing up articles of incorporation.

Douglas Fir for Trunks

Douglas fir is coming to be used considerably in the manufacture of trunks. In Los Angeles two factories utilize about 400,000 feet annually for this purpose.

Veneer from English Walnut

An English walnut tree which grew in Nuneham Park, England, was sold recently for $100. The log changed hands several times and finally reached the United States. Here it was reduced to 60,000 feet of veneer, which sold for $7,500.

Paper Potato and Onion Sacks

Potatoes and onions are now sold on the Washington market in fiber sacks made from wood pulp.

Possible Lumber Boom in Canada

A purchase of 1,000,000,000 feet of lumber by Great Britain in Canada is reported. Such an order would be the biggest Canada has had in the past 50 years, and there is some question as to whether it would be possible to fill it in view of the small supply on hand.

Department of Range Management Established in Utah

Prof. Raymond J. Becraft, formerly with the Forest Service, has been placed in charge of the department of range management just established by the Utah Agricultural Experiment Station. One of the first undertakings of the department will be to increase the carrying capacity of Utah ranges by scientific management.

Lumber Congress at Chicago

A meeting of lumbermen will be held at Chicago April 14 to 17 inclusive, under the auspices of the National Lumber Manufacturers' Association.

Colonel Graves will address the Congress on "A National Lumber Policy" on April 16.

District Foresters Meet in Spokane

The meeting of the District Foresters will be held at Spokane, Washington, beginning March 31, 1919.

Colonel Graves expects to leave Washington on March 27 for the meeting.

Washington Notes

Assistant Forester Carter has left Washington for an inspection trip in the Southern Appalachians. We do not expect to see Mr. Carter again for at least a month.

Grazing Examiner H. H. Bryan, who resigned from the Forest Service to enter the officers' training camp at Camp Taylor, Kentucky, will not return to the Forest Service.

Robert R. Hill, grazing examiner in District 3, is in Washington working up his part of a joint report on a recent grazing and economic survey of the public domain and intermingled Santa Fe railway lands in northern New Mexico and Arizona. Mr. Hill represented the Forest Service and E. O. Wooton the Bureau of Farm Management. Secretary Houston ordered this survey at the solicitation of the Congressional delegation from Arizona. It came originally from the stockmen who use both the public domain and the railroad lands and who are desirous of having some control placed over the lands.

District 2

Forest Inspector D. D. Bronson spent last week in the District Office on allotment estimates.

M. W. Thompson recently gave an illustrated lecture on Forest Service timbersale work to 125 employees of the Hallack and Howard Lumber Company, Denver. Mr. Thompson told them all about how the Forest Service appraises and sells timber.

Ranger Frank H. Bailey, in charge of the Denver Sign Shop, has invented a galvanized iron frame for standard Forest Service fire signs. This frame is fastened to a board, which in turn may be screwed or nailed to a post or tree, the galvanized iron forming a narrow 3/4" frame into which the ordinary cardboard fire sign may be placed. The frame and board are painted green and form a very attractive background for the black and white sign.

Recreation Engineer Carhart and Supervisor Cook, of the District Office, visited the Colorado National Forest during the past week and laid out preliminary plans for public camp grounds along the Cache la Poudre River and Big Thompson canon.

A public camp-site bill which provides for the purchase of parcels of land to be used as free public camping grounds is now before the Colorado State Legislature. The bill empowers a commission to purchase tracts not exceeding five acres in extent at a cost not to exceed $100 per acre along and contiguous to State routes or highways, and to pay for the same from the county road fund. If this bill becomes a law it will greatly facilitate the location of camping grounds within the National Forests especially along main traveled highways where practically all the adjoining lands are now under private ownership. The bill makes it a misdemeanor subject to a fine not to exceed $100 for any person to destroy any trees, deface any natural object, or befoul any source of water supply located on or in the vicinity of public camping sites so purchased.

The enlargement of the Beal Nursery on the Michigan Forest is under way. The present production is 300,000 trees, which is to be increased to 500,000 in 1921 and 700,000 in 1922. This will provide stock for 700 acres and 1,000 acres, respectively, in the two years.

Game propagation and protection activities on the Michigan Forest this year will include the planting of bass and other lake fish furnished by the Michigan Fish Commission and the Bureau of Fisheries, also the continuation of planting brook trout and the liberation of young ring-neck pheasants which are to be hatched at the ranger stations. It is planned to liberate them in the vicinity of the Silver Creek and Norway Ranger Stations. The State Game Department furnishes pheasant eggs to interested citizens, with the provision that the young pheasants must be liberated at the proper time.

The rangers and other Forest officers on the Michigan Forest will be appointed deputy State game wardens.

District 3

Greenlee County's share in the construction of 33.32 miles of the Clifton-Springerville road within the county will be $236,459, on the basis of the award just made to the successful bidders. The bid is $38,928 less than the Government estimate for this section of the road.

The Renasco Lumber Company, operating in Rice Canyon on the Lincoln Forest, has received a caterpillar tractor to be used in transporting its output to market, replacing the teams hitherto used, which have proved expensive.

Progress is being made by the Apache Lumber Company in connection with its timber sale on the Sitgreaves National Forest. A total of 625 million feet of National Forest and Indian Reservation timber is included in the operations. Cutting operations will begin on the Indian Reservation. It will probably be three years before any cutting is done on the Sitgreaves Forest. As a preliminary it was necessary to build the Apache railway from Holbrook south 70 miles to Cooley, which is in the heart of an enormous belt of fine timber. At Holbrook connection is made with the main line of the Santa Fe. The mill will be a three-band mill and it is expected to be ready for operation about August 1. It will have a capacity of 225,000 feet for a ten-hour shift, and will be electrically driven, each machine having its own motor. Every known device for safety and every arrangement for the convenience and welfare of the employees will be provided. Upon completion the mill will rate as one of the finest in the country, and will employ 500 men. Timber for fifty years is available.

The Pecos River Cooperative Grazing Association was recently organized at East Las Vegas, N. M., by permittees using range on the Panchuela district of the Santa Fe Forest. County Agent Gonzales and Forest Ranger Reindorp were in attendance at the sessions and assisted in getting the organization perfected, just as they had been active beforehand in getting the permittees interested. The association plans to employ herders, provide salt for cattle, build drift fences, cooperate with the Forest Service for extension of grazing privileges, and protect cattle against thieves.

District 3 (Cont.)

After twenty-one months of service, of which ten months were spent as military police at Camp Merritt, N. J., Sergeant Herbert W. Johnston, K Co., 13th U. S. Infantry, has been pried loose from his job. Sergeant Johnson has returned to District 3 and will resume his duties as grazing examiner.

A carload of horses was purchased for the Santa Fe at the recent bargain sale at Camp Cody by the representative sent there for that purpose.

Supervisor Arthur, of the Lincoln, has received some more "deer-killing by eagles" reports. The following is an excerpt from such a letter:

> "Pat _________ of Carlsbad (a good reliable man) told me that two eagles run a deer into his mother's yard or garden near Queen and tore it up so it died there. My friend Arthur _______ told me last year about seeing an eagle or eagles kill a young calf. Since getting your letter I asked several of my neighbors about the eagles and they say they are sure death on lambs, kids, pigs, etc. I imagine they are the worst enemy the Mountain sheep have as they stay in the same kind of a place."

District Forester Redington and Assistant District Forester Kerr made a trip to Phoenix, where in company with Supervisors Marsh and Yarnall they met with the advisory boards of the wool growers of the Coconino and Tusayan Forests. Discussions covered sheep allotments, changes in boundaries, five-year grazing permits, and possible cuts to take care of beginners. While at Phoenix Mr. Redington conferred with Governor Campbell on the road program for the State and with the game warden on the game refuge question and the game situation in general.

District 5

R. B. Ayres, supervisor on the Stanislaus, has resigned after having put in a good many years on the Forest. J. V. Wulff, now lumberman on the Sierra, will return to the Stanislaus and succeed Mr. Ayres.

New grazing applicants on the Mono receive particular attention from Supervisor Maule, who states that, accompanied by the ranger concerned, he visits each new applicant to get first-hand information as to the applicant's qualifications. The county assessor's records are also consulted. It has been found in many instances that the applicant puts himself in Class A, whereas the investigation puts him in either B or C.

The problem of proper salting of stock on the range on the Modoc Forest is done by the following system, as explained by W. S. Brown:

Salt boxes had already been placed on the most heavily grazed portions of the Forest, through a cooperative scheme worked out with the stockmen. Last spring Supervisor Durbin suggested to the various associations the cooperative purchase of the salt to be placed on the range. The trial was successful and will be repeated this year. Early in the year notification was sent to merchants of the approximate amount of salt to be purchased and the points of delivery. As soon as the permits were approved each permittee was notified of the amount of salt he would be required to place on the range and the various merchants were informed of the total amount needed. Permits are not issued until each permittee has made the necessary arrangements for his full quota of salt.

The incidental business transactions are taken care of by the association; the guidance and supervision is by the Forest officers.

District 6

The Portland office of the Forest Service contributed $100.62 to the Armenian-Syrian Relief fund during the recent drive.

The largest yew tree yet reported in District 6 was recently found and measured by Mr. Jackson, at Eagle Camp Grounds. The tree stands in an unfrequented part of the grounds and measures 29 inches d.b.h. It is about 60 feet in height.

A study of Sitka spruce growth will be carried on during the coming field season. The large amount of spruce cut for war purposes makes material available. The study will be carried on in western Oregon and on the Olympic Peninsula, in Washington. The field work will be in charge of Forest Assistant N. L. Cary.

The Goose Creek Cattle and Horse Association, using range on the Minam, has voted to cooperate in the eradication of about 20 acres of tall larkspur on the Goose Creek range. The estimated cost of this work is $300, $100 of which will be paid by the Stock Growers' Association and the remainder by the Service. The work will be done about June 1. This 20-acre tract of poisonous plants has been responsible for an annual loss of cattle valued at about $600.

Captain James Frankland called at the District Office this week. He has just returned from France and received his discharge from the army. Captain Frankland was formerly engaged in topographic work in District 6, and has had an excellent opportunity to study French topographic mapping methods while in Europe. The transport on which Captain Frankland returned ran into bad weather and was six days overdue when she arrived. During one storm a wave washed over the deck and down the hatchway amongst the men assembled in the mess-room, seventeen of whom were seriously enough injured to be laid up in a hospital. After a few days' visit at Seattle, Captain Frankland will return to his former place in the District Office.

Forest planting in this District will begin about April 1, on the Mount Hebo planting project, Siuslaw Forest, where about 500 acres will be restocked this spring. Forest Examiner Johnson, who has been in charge of planting on this project for the past five years, is now on the area making arrangements for a planting camp. Planting will also be done on the Olympic, Cascade, Crater, and Oregon Forests. On the Oregon the planting will be the restocking of the Still Creek area, which was planted several years ago and burned over in 1918. Altogether about 2,000 acres will be planted up in this District during the present season. One million four hundred thousand trees are at the Wind River Nursery ready for planting.

Supervisor Macduff, of the Siskiyou, recently addressed the members of the Chamber of Commerce at Grants Pass on the subject of "Roads."

Ranger Walter Jones, of the Siskiyou, has devised an eye protector for the use of lookouts. The device is simple. It is made of cardboard, painted black, fitting over the eyes, and has a long horizontal opening lined with narrow strips which prevent the entrance of light from the sides, also from above and below. A test will be made by several lookouts. Ranger Jones states that his device will successfully protect the eyes against the bright glare in the atmosphere at high elevations.

Emergency fire tools for 500 men will be available for immediate shipment from Portland. This equipment is stored in a storeroom specially rented by the Forest Service. Having this equipment ready will obviate all delay when the hurry call comes from the field.

T. H. Sherrard, A. K. Wiesendanger, and A. G. Jackson have been elected trustees of the Trails Club of Oregon for the ensuing year.

The completion of operations on the Coos Bay sale on the Siskiyou gave an opportunity to check the amount cut as against the estimate, and shows an underestimate of 6.6 per cent. The original estimate was made by H. A. Haefner who likewise prepared the following interesting comparative table:

	Estimate by species	Cut by species
Douglas fir	11,386,000 B. F.	12,554,520 B. F.
Port Orford cedar	4,114,000 " "	3,811,300 " "
Western red cedar	209,000 " "	280,530 " "
Hemlock	365,000 " "	345,960 " "
Grand fir	27,000 " "	147,970 " "
Totals	16,101,000 " "	17,140,300 " "
		16,101,000 " "
	Underestimate	1,039,300 " "
	or 6.6%	

WEEKLY BULLETIN

Forest Service - Washington Office

(Not for publication)

March 31, 1919.

Twentieth Engineers Will Return Soon

Colonel Greeley writes that embarkation orders have been issued for the return of the units of the 20th Engineers still in France. His letter follows:

"Things are moving somewhat faster with the Forestry Section at present. Out of the 85 companies of Engineer Service Troops in the Section, some 23 companies are working on the repair of roads. All of our sawmills are down with the exception of 11 mills which are operating on fire-killed tracts in the Landes. We shall probably continue these operations until the 1st of May. We are also running small re-manufacturing plants at several points to work up surplus stocks of road planks, bridge timbers, and other thick lumber into inch and two-inch diameters for current army requirements. The demands of the army for lumber have kept up to a surprising degree since the termination of hostilities. Following the armistice, I thought that we would have a large surplus of lumber, but the requirements for improvements at the large embarkation camps and the demands for packing material and for all sorts of small structures to improve the facilities in the divisional areas will apparently take all of it. I had expected that the products of the fire-killed operations would be turned over entirely to the French; but it now seems not unlikely that a portion of it at least will be needed by the A.E.F. itself. It is also probable that it will be called upon to furnish some material for the Belgium Relief Commission.

As far as the road work is concerned, I think that we have reached the peak of the requirements upon the Forestry Section and that from now on troops will be released from time to time. I have been able to resume the embarkation schedule, to my great pleasure. The General Staff has listed the 1st Battalion of the 20th Engineers with four companies, who arrived in November 1917, to return on March 1st. I am going to put in a list of units for every 15 days thereafter. With the best luck, we should be able to embark the last of the technical forestry troops by June 1st or June 15th, although there is no forecasting what army requirements may interrupt this program.

The Forestry Section furnished about 20 officers for the appraisal of military damages to forests and farmlands under the general appraisal scheme instituted by the Peace Commission. Several of our men went to Italy and Belgium as well as covering France; and others were about to start on similar missions to Serbia and Roumania when this whole work was terminated. Lt. Col. Chapman, who had charge of the section dealing with forests and farm properties, will probably return to the United States in the near future; also Capt. E. S. Bryant, who was engaged upon this work. Capt. Ringland, also employed upon it, is now released and I presume will return home very shortly with his sapper regiment.

Major Stuart is now commanding the 5th Battalion, 20th Engineers, in the Gien District. He will probably embark with his battalion during April. It may be possible for Lt. Col. Peck to come home also during April, although this is still uncertain. His fuelwood project was handled very ably and was thoroughly successful. The army has been well provided with fuel during the winter and Peck is now rapidly terminating his operations.

The settlement for our forest purchases is proceeding as rapidly as could be expected, although involving many vexatious delays. Col. Joubaire's organization and the various Centres des Bois are adjusting our purchase contracts on forests which were but partly cut to include only the timber actually taken, and we are coming out very well in that respect. Our records in every case will contain a map of the forest, showing just what was cut; a final scale report, and release from the owner from damages or claims arising from the operation. To accomplish all this is a long, slow job, involving nearly 300 transactions; and it looks as though Major Woolsey and I were due to take the last boat. We are also confronted with the problem of obtaining adjustments on the estimates of cessions from State forests, which, in a number of cases, were excessively high; also of endeavoring to secure a reduction in price on certain of the State forests. The prices charged in our cessions were steadily increased in many cases, due to the inadequate control of the whole situation in France, with which you are familiar. The restriction of commercial sales to 25% of the product of the mills in most instances lead to exaggerated and speculative increase in price on the commercial market and this very increase in turn was taken as a basis for fixing prices to the A.E.F. in later cessions. Our last cessions in the Jura, of Sapin, were charged at 70 francs per cubic meter, from 10 to 20% of limbs and topwood being included at the same rate. This is equivalent to a charge for stumpage of nearly $50.00 per thousand board feet of cut lumber. We are protesting vigorously against this situation, but, to what effect, remains to be seen.

My former guesses as to the return of members of the Forest Service have proved very wide of the mark, as the road repair program has intervened. The best estimate I can make today is that the men in the 20th Engineers, including Ames, Granges, Kiefer, Peck, Stuart, Kittredge, and Hall should all leave France prior to June 1st.

The opening now seems afforded to take up the question of educational courses in forestry for a few of our men. I do not know how far we can carry it, but am working on it and will take the matter up shortly with President Butterfield in Paris. We are putting in a lot of work in the office on a very comprehensive history of the Forestry Section and its technical operations and are preparing standard tables of organization and equipment for the use of the War Department if a forestry organization should prove necessary in the future. Capt. Dunstan is working up a brief of the history of each operation and Capt. Staebner is getting together the best results of our experiences on the efficiency of each type of equipment. I am working personally on the general organization and development of the forestry work with the A.E.F., the cooperative relations developed with the French, etc.

The work here is still full of interest and would be very enjoyable if there were not so many service stripes on our sleeves."

Tree Planting on Department of Agriculture Grounds

In memory of the members of the Department of Agriculture who died in military service during the war, a white oak tree was planted on the Department grounds by Secretary Houston and Lieut. Colonel Henry S. Graves on March 26, 1919. Various other officials were in attendance, including officers from the War and Navy Departments. The observance was simple, in view of the fact that a more formal dedication of the tree is planned later.

In connection with the planting, Colonel Graves said: "Many members of our Department gave up their lives in the great war. We will not forget the part they played in that struggle, nor their sacrifice. We shall pay tribute to their memory in diverse ways. Today we are planting a tree for them.

Nature will build from it a living monument. Every year it will strike its roots deeper, raise its crown higher, and spread its branches wider. It will grow in stature and strength, like our own appreciation of the devotion of the boys who gave all that their country and the world might be a better and happier place to live in."

The tree planting was attended by a formidable array of movie photographers and it is expected that the reel will be widely distributed throughout the country in the movie theaters as a part of the weekly news service. Field officers should therefore be on the lookout so as to have a chance to see in what good shape the work was done.

Greathouse Dies from Wounds

With deep regret announcement is made of the death of Roy L. Greathouse, Forest Ranger on the Jefferson Forest, on March 12. His death was the direct result of a shrapnel wound in the neck received while serving in France. Ranger Greathouse was invalided back to this country and spent considerable time at the Walter Reed Hospital in Washington. He was wounded several times and had lost one of his hands. Ranger Greathouse was a member of Co. A, 362nd Regiment of Infantry.

With the death of Ranger Greathouse the Forest Service has lost 18 of its members in the war.

Aircraft Forest Fire Patrol

The Secretary of War has informed the Secretary of Agriculture that the War Department will undertake experiments in forest fire patrol with aircraft, and has instructed the Director of the Air Service to make the necessary arrangements for conducting such experiments in cooperation with the Department of Agriculture.

Forest Service Memorial

The design of the proposed bronze memorial tablet to be erected by members of the Forest Service in the Atlantic Building in memory of the 18 men who lost their lives in the war has been accepted.

The bronze tablet is to be 40 inches by 22 inches and is to be built in accordance with the design submitted by the Tiffany Studios of New York City. It is planned to have photographic or lithographic reproductions made of the finished tablet for distribution to the District and Supervisors' offices and to the families of the men whose names appear on the tablet.

It will require approximately $900 to carry out the plans. The tablet will cost $850, and an additional $50 will be needed to meet incidental expenses.

Contributions to the fund will be very acceptable and should be sent to M. E. Fagan, Forest Service, Washington, D. C.

War Memorial for the Department of Agriculture

In recognition of the valiant services rendered by employees of the Department of Agriculture, it is proposed to erect a fitting testimonial on the grounds of the Department in Washington. Such memorial is to be in keeping with the architectural design of the Department buildings, and to be in accordance with the plans of the Fine Arts Commission for the improvement of the Mall.

A handsome stone drinking fountain, bearing a bronze tablet with the names of the men who died in service, has been approved by the Secretary of Agriculture and informally approved by the Fine Arts Commission. Permission of Congress to erect such a memorial will be requested.

A central committee to formulate plans and perfect an organization to execute them has been organized and will have the cooperation of a subcommittee in each Bureau and separate office in the Department.

Every employee will be given opportunity to have a part in the memorial and voluntary subscriptions to the fund to be raised will also be accepted from friends and relatives of Department employees who lost their lives.

Subscription cards will be supplied and the amount pledged may be made payable immediately or at a future date.

A supply of subscription blanks will be furnished to each Supervisor for distribution to the field officers, to be filled out and returned to the Supervisor, who will keep the record card and forward the pledge card to the District Forester, who in turn will forward the pledges for the whole District to the Forester. Returns should be forwarded monthly. Checks should be made payable to R. F. Vass, Treasurer, but all contributions by members of the Forest Service should be sent to the Forester.

Big Business by the Relief Association

More than $6,000 has been paid out to employees for sick benefits by the Government Employees Mutual Relief Association since the first of the year. This activity is merely a continuation of the effective work done by the association last year, particularly at the time of the flu epidemic. Forest officers will do well to give serious and careful consideration to the advantages to be gained by membership in the association. The benefits obtainable from the association cover contingencies not coming within the scope of the federal compensation acts.

The new secretary, C. H. Squire, says that with the advent of the daylight saving law he is going to have the work he has inherited from his predecessors caught up very shortly. Mr. Squire further calls the attention of the returning Forest officers to the desirability of immediately becoming members of the association. This same invitation is extended to all male employees not now members. There is no time like the present. Don't put it off!

Wisconsin Legislation

A bill has been introduced in the State legislature to repeal that part of the Conservation Commission law providing that one of the three commissioners shall be an experienced forester.

The law as it now stands provides for a "technically trained forester," and it is proposed to substitute the following: "man well informed and experienced in land divisions, location of lines and quality of soils; familiar with timber and qualified to estimate amount, quality and value of same and to direct methods of protection and cultivation thereof."

The proponents of technical forestry feel very strongly that the adoption of the proposed changes will sound the death knell of technical forestry in Wisconsin.

The proposed modification is occasioned by the alleged inability of the Governor to find a qualified forester as required by the present law to fill the vacancy caused by the death of F. B. Moody, who was the forestry member of the Commission.

Idaho Legislation

The Idaho legislature which has just adjourned enacted several measures of interest to foresters.

The State Land Board is forbidden to dispose of land on the shores of Payette Lake. This action was taken in response to protests made by owners of summer homes who claimed the beauty of the lake would be spoiled if the timber were removed.

The office of the lumber inspector for district No. 2 was changed from Harrison to Coeur d'Alene; the Scribner Decimal C Rule was adopted as standard in scaling and measuring logs; provision was made for the sale of logs and the division of proceeds, and for payment by the inspector for all expenses incurred in driving, sorting, and caring for prize logs; and it was made a misdemeanor to appropriate or mark prize logs.

The final form of the prize log law is not available, but as introduced it classified as prize logs all logs or timbers without legibly recorded mark and all logs bearing a legibly recorded mark not claimed within one year after any general drive.

Prize logs are to be sold by the lumber inspector of the district where found and the proceeds divided among the owners of logs in proportion to the number of logs owned and put afloat during the year by the individual or firm.

Mutilation, disfigurement, or remarking logs is made a misdemeanor punishable by fine not to exceed $500 or by six months' imprisonment, or both.

The bill which would have created a forestry board for the management of Idaho's timber resources died in the Senate Committee on the last day of the session. The measure had passed the House by a large majority, but the adoption of a rule that no more bills would be considered after noon of the last day found the bill the second from the bottom of the list of unconsidered measures.

Congress was asked by a memorial passed by the legislature to create a National Forest of approximately 1,120,000 acres in the Thunder Mountain region of Valley County. This is the second time that the legislature has memorialized Congress to take this action.

Washington Legislation

Another effort to class logging railroads as common carriers under regulation of the public service commission was abandoned several days before the end of the session of the Washington legislature. The bill was introduced in behalf of the smaller logging companies lacking railroad facilities. The object was to establish legal means of compelling companies owning roads to haul out logs of smaller companies under a common carrier provision which would require the larger companies' railroads to accept all traffic offered at freight tariff schedules

Washington Legislation (Cont.)

fixed by the Public Service Commission. In the consideration of the bill by the Senate Committee it is reported that the impracticability of the measure at this time was demonstrated. The question is to be postponed to await more permanent development of logging railway extension. It appears that none of the established roads could handle all traffic offered and none was prepared to engage in common carrier business even at an attractive freight rate as the roads are built and equipped to carry the output of camps belonging solely to the operating companies.

Oregon Legislation

The old law on fighting forest fires has been amended to make it a misdemeanor punishable by a fine of from $10 to $100 for refusal to aid in fighting a grass, brush, or forest fire. Any person, firm, or corporation responsible for starting a forest fire and refusing or failing to put it out is liable for damage done by the fire, and the damage may be collected through the courts by the State forester.

Washington Notes

G. A. Pearson has gone back to the Fort Valley Experiment Station after having spent several months in Washington.

R. F. Hammatt left Washington for San Francisco, where he expects to start the ball rolling on publicity work in connection with the fire prevention and recreational campaigns.

S. T. Dana is once more a civilian, and as such is back at the same old stand in the Atlantic Building as Assistant Chief of Forest Investigations.

Don P. Johnston is in Washington for a brief interlude in his work at the Madison Laboratory.

Roy Headley left Washington last week for Spokane to attend the meeting of the District Foresters. We hope that by the time he returns to Washington he will have solved the important riddle of how to make salaries look bigger than they are.

Arizona cypress from the Fort Bayard Experiment Station is the latest addition to the arboretum in Rock Creek Park in Washington, which is under the direction of the Forest Service. More than 200 tree species are now to be found in the arboretum.

During the past week C. R. Tillotson supervised the distribution of 15,000 basket willow cuttings from the willow holt at the Arlington Farm. This annual distribution is made to applicants interested in growing willow for basket purposes. Each applicant gets but a limited supply, sufficient to form a nucleus for a holt from which the recipient can develop a holt for commercial purposes.

W. D. Sterrett took to the woods last week and made an examination of an 800-acre private tract of forest land in Delaware.

Forest Products Laboratory

The whole organization of the Forest Products Laboratory, including wives and children, assembled in the auditorium of the University of Wisconsin to see themselves perform in the movies. Director C. P. Winslow gave an interesting talk on the broad aspects and correlations of the work which had been carried on at the Laboratory during the past year. He commended highly the fine spirit shown by the whole organization and described briefly the notable accomplishments of each of the technical sections. In discussing the importance of careful work he showed how a small error on the part of one person might be followed by small errors by others and the value of important results thereby destroyed, in some cases even leading to false conclusions.

The motion picture show lasted for 30 minutes and the audience showed intense interest commenting freely and laughing heartily as each friend or acquaintance did his or her "stunt."

Forest Products Laboratory (Cont.)

The reel gives the story of the development of the Laboratory from an organization of 80 people to wartime strength of 450. A spruce log is cut in the forest, delivered at the Laboratory, sawed into test specimens which are carefully marked and tested in a variety of ways for different uses. The making and testing of glue and plywood is shown in detail and the aluminum leaf moisture proofing process illustrated. Boxes are tested, kiln drying and vehicle manufacturing processes shown, and methods of wood preservation illustrated. Various parts of aircraft, such as wing beams, wing ribs, engine bearers, and propellers are manufactured and tested. The picture concludes with the testing of fireproof construction at which the fire department is present but not needed.

District 1

The Gallatin County Commissioners have signed cooperative requirements for the survey and construction of two sections of the West Gallatin Road. The county will contribute $20,000 and the Forest Service $20,000.

Teton County has signed a cooperative agreement for the survey and construction of the Glacier Park-Summit Road. The county will contribute $10,000, and the Forest Service will put up an equal amount.

In the spring planting work it is planned to set out yellow pine nursery stock on 500 acres of the Pend Oreille projects near Cabinet and on 400 acres on the Lolo between Haugan and Saltese. On the St. Joe project near Adair, Idaho, it is planned to cover 150 acres, of which two-thirds will be yellow pine and one-third white pine. An additional small area will be sown to Engelmann spruce.

W. S. Wahlenberg, Forest Assistant, has been assigned to duty on the Kootenai.

Floyd Ellis has returned from military service at Camp Dodge, Iowa, and has been assigned to drafting in the District office.

William E. Lockhart, Forest Ranger on the Beartooth, has resigned and expects to go into ranching.

Capt. Spaulding of the State University has returned to Missoula, and recently gave an interesting talk on his experiences in France. He suggested several adaptations of military equipment for use by the Forest Service, as follows:

Marmite Cans - Built like a milk can and having the functions of a fireless cooker. Two can be packed on a horse. It will keep food hot many hours, and would be of much value for fire, improvement, road, and planting crews.

Reflectors or Searchlights - for signalling. Made in 6" and 10" diameters. With the larger size, messages may be sent 20 miles through the haze. The light is furnished by a series of simple telephone batteries. In Service work its value is apparent in fire protective work where there are no telephones.

Carpenters' Chests - An exceedingly compact and condensed kit of carpenter tools suitable for the construction of a building. Weight 100 pounds.

Horseshoers' Chests - With all necessary tools - very compact - with anvil. Weight 100 pounds.

Signal Corps Glasses - These glasses are fitted with high quality lens and a stadia etched on the lens similar to stadia hairs in a transit with a capacity of 1 to 1000.

C. A. Skeels expects to get his release from the army at an early date and be able to report for duty in the District on May 1.

Guy Brandbory, who has been on military duty at Camp Lewis since July, will return to his old job as Ranger on the Helena about April 1.

Grazing applications have been received on the Helena about 50 per cent in excess of the estimated capacity for cattle and horses and about 100 per cent in excess of the estimated capacity for sheep.

Last fall's misfortune gives fair promise to turn out a blessing for the planting boss in this district. An effort was made at the Savenac Nursery to plant all the stock on hand and ready for planting, in the expectation that the war would probably still be on in 1919 and that the consequent shortage of labor would make it impossible to do the work. However, fall rains were late and the planting season closed early with a heavy snowstorm, so that the job was not finished and more than 600,000 trees big enough for planting remained in the nursery. This was a big disappointment to the officers in charge of the planting, but with the signing of the armistice all is well again and plans are now under way to do the planting work this spring.

District 2

District Forester Smith Riley left Denver on March 25 for a trip to Montana, before he proceeds to Spokane to attend the District Foresters' meeting.

State Game Warden Judkins, of Wyoming, has entered into an agreement with the Forest Service on behalf of the State of Wyoming, in which it is stipulated that hereafter his department will not issue any trapping permits for use in the National Forests of that State without their first being submitted to the Supervisor of the Forest concerned. This is the beginning of cooperation through which the Forest Service hopes to develop complete plans for the regulation of trapping permits, so that National Forest areas may in time produce handsome returns in furs.

South Dakota recently shipped in a carload of elk from the Yellowstone National Park for the stocking of the State Forest. Thirty-nine head unloaded at the stock pens at Custer broke out and are now at large on the Harney National Forest. The State authorities did not bother to round up the stray animals but ordered another carload of elk for the State forest. The Office of Grazing is very enthusiastic over this method of restocking National Forest range with wild life.

With deep regret announcement is made of the death of Ranger A. E. Cole of the San Juan National Forest on March 19, and Ranger Silas W. Yarnall of the Sopris National Forest on March 20.

The Office of Silviculture recently completed the collection of data, secured from newspapers in Colorado, Wyoming, and South Dakota on the amount of newsprint used annually by each publication, the source of supply, and the freight rates. This information was secured for Supervisor McLaughlin of District 1, who is making a study of print material markets in the Rocky Mountain and Northwestern States.

District Engineer Bright, recently appointed Chief of the Office of Public Roads in Denver, was a recent caller at the District Office.

District Fiscal Agent O. R. Craft is on an extended inspection trip to National Forests of Wyoming.

As soon as the first stock grown in the Beal Nursery on the Michigan Forest was big enough to plant in the fall of 1918, it was put out in the field without waiting for spring. This work consisted chiefly in planting 273 acres with Norway pine 2-0 stock at a cost of $4.35 per acre. This spring an additional area is to be planted with stock from the Cass Lake Nursery in Minnesota.

In the spring of 1918 a quarter section of land on the Bessey Division of the Nebraska Forest was burned over prior to planting as an experiment to remove a rank accumulation of grass, reduce the fire danger, and make the planting easier. However, the grass sprouted with renewed vigor after the fire and competed with the trees for the available moisture in the ground even more vigorously than on the unburned areas. The lack of ground cover also resulted in greater movement of the sand. The loss in yellow pine plantations was 15 per cent and in jack pine plantations 22 per cent greater on this burned area than on adjacent unburned areas planted at the same time.

Two years ago the citizens of northern Colorado urged upon Congress the passage of a law creating a Federal game sanctuary in a portion of the Colorado National Forest. The proposed sanctuary lies in that portion recently added to the Forest by Act of Congress. At the present session of the State Legislature a bill was introduced and passed both houses to create a game preserve over practically the same area designated in the Congressional bill for a sanctuary. This action shows a very earnest desire for game culture and protection by the people of the region. Owing to the old question of the constitutionality of a game preserve in the State of Colorado, members of the State Game Warden's office are in hopes action may be taken in the next Congress upon a bill to create the Federal sanctuary. Such action would seem particularly advisable in this case where Federal assistance is sought to strengthen the State's action looking to building up a strong game protection policy.

District 3

Forest Examiner George W. Kimball, known to us for some time past as Lieutenant Kimball of the 10th Engineers, is back in the Forest Service and will be assigned to timber sale inspection work until May 1, 1919. Later he will join the Lincoln timber reconnaissance party as timber cruiser.

Supervisor Elliott S. Barker of the Carson Forest has resigned from the Forest Service and has gone into ranching and the livestock business on his ranch at Beulah, N. Mex. Supervisor Barker entered the Service as a ranger on the Jemez division of the Santa Fe Forest in 1907. Later he was assigned as ranger to the Carson and in June 1916 he was made deputy Supervisor and promoted to Supervisor in August 1917 at the transfer of Supervisor Marsh.

Mr. Barker has a thorough knowledge of the language and habits of the Spanish speaking people and he is very well posted in game matters in the Southwest and and has a reputation as a sportsman and hunter. Mr. Barker took part enthusiastically in all community and patriotic activities.

District Engineer Long will meet with the County Highway Commissioners of Navajo County to arrange for cooperation on the Snowflake-Pinetop Road some time early in April. Informal assurance has been given Mr. Long that a resolution will be passed favoring a bond issue for $20,000 and that $5,000 general road fund money for use this year on this road will be made available.

An allotment of $2,735 has been made for the completion of a timber reconnaissance project on the Lincoln Forest. L. C. Davis is already in the field establishing the trigonometric control. A topographic base map will be prepared and timber estimates made of all the merchantable timber on the area.

The timbered portion is estimated to cover 136 sections. Three parties of timber cruisers will be employed, each party consisting of a cruiser and compassman. G. W. Kimball and Marinus Westvelt have been discharged from the army and will be assigned to this work.

District 4

Ample justification for spending funds for the control of livestock diseases, the eradication of poisonous plants, and the extermination of predatory animals from National Forest ranges is found in some statistics recently compiled in this district.

During the fiscal year which ended June 30, 1918, 4,187 cattle and horses, worth $209,000, and 40,228 sheep, worth $523,000, were lost through predatory animals, disease, poisonous plants, and other miscellaneous causes within the National Forests of the Intermountain District. The fact that this loss, amounting to three quarters of a million dollars in a single year, occurred upon grazing lands which are admittedly superior to those comprising the open public ranges, gives some conception of the hazards attending the production of livestock in the West.

Predatory animals took the heaviest toll from the range flocks and herds, killing 273 cattle and horses, worth $13,650, and 21,813 sheep, worth $283,569. The next most destructive agency was the poisonous plant, which killed 2,139 cattle and horses, worth $106,950, and 7,612 sheep, worth $98,956. Disease accounted for a loss of 368 cattle and horses, worth $18,400, and 505 sheep, worth $6,565. Miscellaneous causes, including lightning, floods, bogs, etc., account for the remaining 1,407 cattle and horses, worth $70,350, and 10,298 sheep, worth $133,874. Lightning was particularly destructive, causing heavy losses as a consequence of the congestion of stock at points struck by lightning.

The Caribou Forest held a two-days ranger meeting the middle of February as a follow-up to details of the rangers to the Supervisor's office in the consideration of grazing applications and allotments.

The sum of $75.00 has been allowed Supervisor C. A. Mattsson of the Fishlake Forest as reimbursement for a horse which was killed by lightning on September 17, 1916, while being used by Mr. Mattsson on a grazing inspection trip.

Approximately 140,000,000 feet of lodgepole pine timber on the Wyoming National Forest is to be advertised. The estimate shows 2,000,000 hewn ties, 40,000,000 feet of saw timber suitable for ties, and 12,000,000 linear feet of mine props. The timber will be driven down Green River, a branch of the Colorado, and loaded at Green River Station, Wyoming.

In his appraisal report Mr. Seerey states that if the booms in Green River give way it will be necessary to salvage the material in the Gulf of California. If this is not done the ties will have to be sold to the Southern Pacific for use in Arizona or to some of the Mexican railways instead of to the railroads in Wyoming.

District 5

The placing of District rangers and other field men should be done with more consideration of the various factors that influence the individual work. This was pretty clearly brought out at the recent supervisors meeting at Davis.

When the forest officer has children he should be stationed where school facilities are available if possible. It is also better policy to place the men with families in Government owned quarters when this can be done.

Assignments in this District will hereafter bear the following in mind:

1. Location of headquarters with respect to nearest town or settlement.
2. Character of school facilities available and distance from headquarters.
3. Whether quarters are furnished by the Forest Service or must be rented.
4. If rented quarters are necessary, what is the average rental for the kind of quarters needed by a man with family?
5. If quarters are furnished by the Forest Service, are they sufficient in size for the needs of the man who will occupy them?

Supervisor Bigelow held a Ranger meeting last week. The program provided for a discussion of the season's work, the Supervisors meeting at Davis, and the fire law enforcement work for the coming summer. A meeting of the Tahoe Livestock Association is scheduled to follow the Ranger meeting.

Motion pictures of the winter deer range on the California Forest were made recently. Ned Cooper, a well-known hunter and fisherman, piloted the party, which consisted of J. D. Maxfield of the District office, Paul J. Fair of the California Academy of Sciences, and B. N. Mace, deputy supervisor of the California Forest. The party had varying experiences, especially as the river was deep and the water cold. About 800 feet of film were made.

District 6

Because of the light snowfall up to March 1, it was believed that planting on the National Forests of District 6 would begin this spring at an earlier date than usual. There has been a heavy snowfall in the mountains, however, and this means that the planting will not begin until well after April 1. Probably the first planting project that will be ready for field work is in the vicinity of Rustler Peak, on the Crater.

The survey plat for forty-one summer-home sites, a hotel site, and a public camp ground, at Spirit Lake, Washington, on the Columbia, has been approved by the District Forester. This is the second group of summer-home sites surveyed at Spirit Lake and is located about one-fourth of a mile from the summer camp of the boys' department of the Portland Y. M. C. A., and is within easy walking distance of the summit of Mt. St. Helens. Spirit Lake has been a popular camping place for parties from Castle Rock and other towns in southwestern Washington. The lake is located one hundred and five miles from Portland and can be reached by auto.

A rather complex timber-trespass case on the Chelan has been settled. Frank Lesh moved on to a June 11 homestead in 1912, improved it, and maintained residence during the statutory period. While occupying the homestead he operated a sawmill upon the place, selling lumber and fruit boxes to the local market. His sawmill venture failed last year, and labor and other liens were filed against the material. Attorneys of the various litigants entered a stipulation to foreclose the claims, subject to payment to the United States of the sum of $181.50. This amount has been paid. The present address of the settler is not known and he has apparently abandoned the place.

District 6 (Cont.)

Forest Examiner A. A. Griffin, who has been attached to the Office of Silviculture for several years, has been assigned to the Olympic and left for his new field of labor last week.

Leaving a donkey engine on the Rainier Forest without a watchman during the noon hour cost the Reliance Lumber Company of Seattle the sum of $685.87 in a judgment just obtained in the federal court. The fire occurred in 1917. It started on private land and then got on to the Forest, where it destroyed government timber and young growth valued at $248.91. The judgment covers the expense incurred by the Forest Service in fighting the fire. No award was made for the estimated damage.

District 7

Assistant District Forester Stabler left last week for an inspection trip on the Arkansas Forest. Mr. Stabler told us not to look for him to get back to Washington for at least six weeks.

Forest Examiner E. L. Lindsey, not so long ago Captain overseas, accompanied Mr. Stabler to the Arkansas. Mr. Lindsey is to busy himself in timber sales administration and the preparation of forest regulation plans for the Forest.

George Goehl of the Bureau of Public Roads has made a preliminary report on several road projects in the Pisgah, Mt. Mitchell, and Savannah Forests. Mr. Goehl went over the Pisgah motor road, the Buck Creek road on the Mt. Mitchell, and the road from Franklin to Aquone through the northern half of the Savannah Forest. In speaking of the bad condition of the roads in this section of western North Carolina, Mr. Goehl stated that he never in his life expected to see any much worse in this U. S. A.

Forest Examiner Damtoft, who is looking after the Government's interests in the operations of the Noyes Land and Lumber Company of Marion, N. C., on Curtis Creek on the Mt. Mitchell Forest, reports that work has been under way for about six weeks. The survey for the flume line has been made, and the company is constructing an A-1 flume to the Old Fort Tannery. To date about one-quarter mile of flume has been constructed, and the company hopes to have it in operation by July 1.

The fire season in the Southern Appalachians has opened and on March 24 and 25 it became serious in North Carolina and Tennessee, owing to very dry weather and high winds. Emergency patrolmen were called out on the Pisgah, Cherokee, and White Top Forests, and the Supervisors were preparing for a fight. Fortunately heavy rains have removed the danger for the present, but continued high winds are rapidly drying up the dead leaves and the Supervisors are watchfully waiting.

Forest Ranger K. E. Kimball read a paper, "Some Reasons for the Practice of Forestry," before the Men's Club of Conway, N. H., some time ago.

During the period between snow and grass on the White Mountain National Forest, the administrative officers have a short breathing spell in which they can look back upon their winter's work and see what has been done. The results in timber sales during the past winter have been very gratifying to the rangers on the Forest and to the supervisor.

Thirty game trespass cases on the Pisgah National Forest and Game Preserve were disposed of satisfactorily at the term of the Federal Court just held at Asheville, North Carolina. There was widespread interest aroused in these cases, particularly as they offered the first real test of the regulation of the Secretary bearing on the protection of game on the Pisgah Forest.

Several kinds of cases were involved. The so-called "dog cases" were the most important, and were very hotly contested. The two defendants in these cases are employees of the Carr Lumber Company who in spite of repeated warnings by Forest officers had allowed dogs owned by them to run repeatedly at large within the Preserve. These dogs had frequently chased and even killed deer. The defendants were found guilty and Judge Boyd imposed a fine of $10 each with costs on the defendants. In passing sentence, Judge Boyd stated that dogs could be kept without permit of the Forest officers, but that such dogs must be kept in confinement or leash.

In three cases jail sentences of 15 and 20 days with costs were imposed on defendants who were caught with game in their possession.

District 7 (Cont.)

The largest number of cases were arrests for carrying firearms while in the Preserve. In most of these cases the defendants pleaded guilty and were fined $5 each and costs. Judge Boyd stated in this connection that it was permissible to carry a gun within the confines of the Preserve provided the person was carrying the gun home, or simply crossing through to some other destination.

Forest Ranger K. E. Kimball reports that 142 sales were made on the Bartlett ranger district for the year ending December 31, 1918. Most of the sales were for fuelwood cut from mature hardwoods. Six sales were for white birch for pegwood. From 100 acres at Bartlett 1,250 cords of fuelwood and 145 cords of paper birch were removed during 1917 and 1918. The material had a total value of $1,653 and averaged $16.53 per acre. It cost 8 cents per cord to administer these sales, including office work and travel. The Bartlett District is proud of its service to the communities adjoining the Forest through its intensive silvicultural practice, unusually close utilization, and low administrative costs.

Forest Ranger Shiffer reports that good progress is being made on the Emmons sale on the Woodstock District. During a period of nine weeks, 20 horses and 17 men logged 112,808 cubic feet of old growth birch, beech, and maple logs taken from an area of about 250 acres. The total value is approximately $2,820.20. The negotiations for this sale were handled by Ranger Shiffer and he states that the purchaser has expressed himself as well pleased with the progress, particularly so because this is the first experience he has had with Government stumpage.

Forest Ranger H. R. Currier reports that the Whitefield sale has closed for this season, its third, and that 138,836 cubic feet of softwoods and 60,438 cubic feet of hardwoods, with a total value of $8,928.96 were cut from an area of about 100 acres. The timber was clean-cut on several areas averaging about five acres each of pure softwood growth. This was done to prevent loss from windfall. All the softwood brush has been burned and these areas stand forth as shining examples of a condition not general in New England of clear-cut spruce land with the brush disposed of by regulated burning.

Cooperation on a fifty-fifty basis for the construction of a six-mile road from Chandler to the Pisgah Forest is provided by a resolution of the county commissioners passed recently. The necessary missionary work has been done by Supervisor Rhoades and District Engineer George Goehl.

WEEKLY BULLETIN

Forest Service - Washington Office

(Not for publication)

April 7, 1919.

Forestry in Illinois

Frank O. Lowden, Governor of Illinois, had the following to say in his message to the Fifty-First General Assembly, on January 8, 1919:

Forestry

In my inaugural address two years ago, I called attention to the fact that we have large areas of land in this State better suited to forestry than to any other use. Provision was made in the Civil Administration Code for a Board of Natural Resources and Conservation to advise the Department of Registration and Education regarding the natural resources of the State, forestry being specially mentioned. Under the direction of the Department some investigational work along this line was undertaken, and as a result the Department recommends that a forester be employed to make a preliminary study of the needs and possibilities of the situation, and I concur in this recommendation.

There are many thousand acres of land in Illinois which at the present time produce nothing, but which are suited to tree culture. Without encouragement, however, from the State, the owners of these lands are not likely to devote them to a crop which cannot be harvested for possibly fifty years. The taxes upon these lands produce but little revenue to the State. If the State could exempt these lands from taxation upon the condition that they were planted to trees, with the provision that when the trees were harvested a proper tax would be collected upon the product, I believe that much of such land would become permanent forests, a source of revenue to their owners and to the State.

Game and Forestry in Maine

The following extracts are from the Inaugural Address of Carl E. Milliken, to the Seventy-Ninth Maine Legislature, January 2, 1919:

Fish and Game

I need not enlarge upon the value and importance of our fish and game interests. The preservation of this great natural resource depends upon the adequate enforcement of the fish and game laws. For the purpose of aiding in this enforcement and at the same time reducing the danger from careless hunters, I recommend a law requiring registration of resident hunters who carry firearms within the limits of the Maine Forestry District.

Forestry

In order to maintain the high efficiency of the present forest patrol service a substantial increase in the tax levied in the Maine Forestry District may be necessary. Owners of clearings desiring to set fires near wild lands should also be required to secure permits from the State Forest Commissioner.

Game Reserves and State Parks in Nebraska

S. R. McKelvie, Governor of Nebraska, in his Inaugural Address to the Thirty-Seventh Session, Nebraska Legislature, 1919, spoke as follows:

Game Reserves

The supply of wild game birds in the State, especially those not of a migratory nature, is rapidly being depleted. I believe this condition can be overcome by declaring each school section in the State a game reserve upon which no shooting would be permitted. The reserves could be designated by signs that would warn hunters against an unintentional violation of the law. If this were done, it might then be practical to attempt the breeding of some kinds of game birds that are not now native of the State.

State Parks

It would be difficult to estimate the amount of money that goes out of Nebraska to tourist points in other states, and yet Nebraska has many places of natural beauty which, if they were developed and advertised, would not only keep many of our people at home during the vacation season but would attract thousands of people from other states. Something ought to be done, while there is yet time, to protect and develop these points of beauty and interest within our State.

Advocates Federal Control of Unreserved Public Domain

Federal control of the unreserved public domain was advocated by D. B. Beard, former president of the New Mexico Cattle & Horse Growers Association, at the meeting of the association just held at Albuquerque, New Mexico.

Mr. Beard advocated a system analogous to that in effect on the National Forests and cited the experiments conducted at the Jornado Range Reserve in New Mexico as an indication of the benefits to be derived from intelligent range management. He contended that the present abuse of the unreserved public domain should be stopped and that the interests of the nation require immediate consideration of this matter. He deprecated attempts to turn over these public lands to the states, because of the feeling that would be aroused throughout the country, particularly in the East where the efforts would be considered a land-grabbing scheme.

Mr. Beard urged that all stockmen unite on a bill for federal control of such unreserved public lands with provisions to protect adequately the rights of the homesteader and the small man, who, he stated, are the backbone of the West.

Taxes and Stockmen in New Mexico

That the stockmen of New Mexico are doing their share in supporting the State by the payment of taxes was the statement made by W. R. Morley at the recent meeting of the Cattle and Horse Growers Association held at Albuquerque.

Mr. Morley showed the relative importance of the cattle industry to New Mexico. The total assessed valuation of all property in the State in 1918 was about $390,000,000 while the assessed valuation of the livestock industry was $137,000,000 or slightly over one-third. The total amount of taxes collected for State purposes was $1,252,000, of which the livestock industry paid more than one-third or $413,000, railroads paid a third and all other business contributed the remaining third.

Actually, however, the livestock industry pays much more as pointed out by Mr. Morley. The industry pays $1,190,000 on the loans to State lands, and $67,000 for county school sections in the National Forests. In addition the stockmen pay $275,000 for grazing permits on the National Forests, of which 35 per cent comes back to the State for school and road purposes.

Woolgrowers and National Parks

The enlargement of the National Parks, with the consequent decrease in areas suitable for sheep ranges, was denounced recently by S. W. McClure, secretary of the National Wool Growers Association.

Mr. McClure made a trip to Washington to oppose the proposed enlargement of the Yellowstone and Sequoia National Parks. According to Mr. McClure, the extension of the Yellowstone Park will deprive 200,000 sheep of grazing grounds, and he feels that the public will soon grow tired of paying sky-high prices for meat and will demand that the sheep and cattle of the West be given more grazing ground.

Will Fatten Cattle in the North

Thousands of cattle from the ranches of Arizona will be taken to northern Wisconsin, Minnesota, and Michigan this spring, it is reported. Large areas have been purchased in these northern states by Arizona cattlemen and they are prepared to make a thorough art of fattening the cattle for the market.

Cooperation of the Railroad Administration has been promised to the extent thatbthe cattle are to be rushed through with but three feeds on route. It will cost about $240 per car to send the cattle north, and for one shipment of 2,000 head two special trains will be required.

Swimming Bulls for the Forests

The opening up of inaccessible ranges on the National Forests is a big problem on account of the large expense involved and the limited improvement funds available.

Not so very long ago a special barge was constructed on a northwestern Forest to transport sheep across a lake to range sufficient to carry 75,000 sheep, but inaccessible through lack of roads or trails. In some Forests difficulty is experienced in getting bridges across swift-flowing mountain streams, and in other places special trails and driveways have been constructed. All this perhaps would be unnecessary if the Forest Service could only prevail on the permittees to introduce the right breed of cattle.

A recent swimming exploit of nine Shorthorn bulls seems to indicate the solution. It appears that a firm in Argentina bought nine English Shorthorns When the ship which they were on was under way it was submarined. The bulls got loose and were freed in the sea. Six of the bulls swam to the coast of Ireland, 50 miles distant from the shipwreck. The other three did not care for Ireland so they struck out for Scotland, a distance of 100 miles. One of these died from exhaustion as soon as he climbed on the cliffs. The other two were found and identified by their tags and were returned to their owner in England.

The swimming bulls were started on a second journey toward Argentina. This time they got a little further out into the sea. They were torpedoed a second time. As yet no report has been received from distant shores of the arrival of the bulls, and the probabilities are they failed to reach the shore. Even so, the breed gives promise of being able to meet all swimming tests that might be put up to them on the Forests.

Reserve Pastures

To lessen loss in early spring of cattle that are too weak to be turned loose on the range before the green grass comes is the object of a new plan for reserve pastures worked out in District 3. Shortage of feed during the winter months leaves much stock in a weakened condition in early spring. This stock is not able to rustle sufficient forage on the regular range which has been used late the preceding year, and it is impracticable to haul feed to carry over the weakened stock.

It is proposed to fence off large areas of the range and exclude all stock from these pastures during the year, except for one or two months in early spring before the grass starts its new growth. This will provide a good supply of forage for the special stock turned into these areas. By locating these pastures at convenient points it will be possible to place the cattle where there is sufficient feed without having to drive them long distances.

New Roads Official Named

Thomas H. MacDonald, Chief Engineer of the Iowa State Highway Commission, has been appointed by the Secretary of Agriculture as Engineer in immediate charge of the work under the Federal Aid Road Act. It is planned that, in the near future, Mr. MacDonald will formally assume the position of Director of the Bureau of Public Roads, made vacant by the death of Logan Waller Page.

D. T. Mason Has a New Job

D. T. Mason, who has just returned from service overseas as Major with the 20th Engineers and who resumed his duties as professor of forestry at Berkeley, California, has a new job, according to an announcement made by Willis Compton, secretary of the National Lumber Manufacturers' Association.

Mr. Mason is to tie up with the Internal Revenue Department and be in charge of the Bureau which will deal with timber stumpage values, investments, and depreciations in connection with the revenue tax law. Mr. Mason was connected with the Forest Service for several years before he went into the teaching game.

Agricultural Census will be Made January 1, 1920

The fourteenth census on farms will be made January 1, 1920, instead of on April 15, as was done in 1910. The date was changed because farmers are ordinarily very busy with the rush of spring work about the middle of April. The Department of Agriculture will assist the Census Bureau in making this coming agricultural census.

The questions include information on the acreage and production of the crops, amount sold or to be sold, live-stock classification both by sex and age, acreage of woodland, and the amount of land on farms drained and needing drainage. Special consideration will also be given to matters of land tenure, farm mortgages, land utilization, the amount of land and acreage of crops irrigated, numbers of young live stock sold, purchased, slaughtered, and died on the farms, and quantity of dairy products and wool produced. Owing to the fundamental importance of these statistics, which provide basic information relative to farms and farming in the United States, it is hoped that farmers throughout the country will assist the census enumerators in every way possible in securing accurate, reliable, and complete information.

Additions to the Arnold Arboretum

The Korean redwood, which the Japanese call "Taiwania," is one of the new species just brought to this country for the Arnold Arboretum by E. H. Wilson, on his return from Korea and Formosa.

It is expected that the Korean redwood will grow from seed as well in a suburb of Boston as on distant Mt. Ari. These Japanese trees rival the big trees of California and one is reported standing in Korea estimated to be 2,700 years old.

It is stated that the climate of Boston resembles that of Korea and it is felt that the new tree species has a fair chance for growth. The time element is not important, for Harvard University is said to have rented the land from the city of Boston for the nominal sum of $1 a year, and the lease runs "for a thousand years, then another thousand years, and so on forever," which makes the time long enough to satisfy the most fastidious tree.

Tree Planting in New York Villages

Authority for the planting, care, and preservation of trees and shrubs along the public streets of villages in the State of New York was granted by the enactment of a law by the recent legislature.

The law provides that the board of trustees in a village may raise annually by taxation and appropriate a sum of not over $1,500 for this purpose.

There are approximately 2,500 villages in New York State and if advantage is taken of the law by all of them, it means that there will be an annual expenditure of $3,750,000 in beautifying the village streets.

Investigative Program

The investigative program of the Forest Service, which was held up during the past two years, has been brought forth and after some revamping to bring it up to date will be put into working order. This work is now under way in the Washington office.

Farming Versus Sawmilling

A few weeks ago we told our readers of the peripatetic sawmill. Last week Franklin H. Smith had one of the cards of inquiry returned with an endorsement which indicates that the cliff dweller in Washington is not the only one having trouble with the help. The correspondent had this to say to Mr. Smith:

"I have not done much in lumbering as on the farm last year help is so high and independent I cant live to do it so my boy and I do just what we can do ourselves we have two good teams have worked out all winter and made pretty well I would like a good housekeeper one neat tidy and economical but the way the law protects the help there is no chance for a farmer when the stuff wont pay the help better stop

Resp"

Roosevelt Forest Experiment Station

The establishment of the Roosevelt Wild Life Forest Experiment Station by the State College of Forestry at Syracuse University is proposed in a bill introduced in the State legislature for New York. The bill has in contemplation the institution of an experiment station which is to keep a record of the results of experiments and research concerning the habits and history of fish, birds, game, and forest wild life in general.

Timber along Payette Lake

The selling of the timber by the State of Idaho along Payette Lake met with considerable protest on the part of many people. F. A. Fenn tells us that Dean Miller, of the forestry division of the Idaho University, was selected to designate the timber for cutting in response to such protests. Payette Lake is of great recreational value and when announcement of the sale was made emphatic protest arose against the removal of any timber that would impair the scenic and recreational attractiveness of the locality. The sale contract was accordingly modified and Dean Miller will examine the sale area and mark for cutting only such trees as can be removed without detriment to scenic and recreational features.

High Lumber Values are Economic Necessity

A statement purporting to be based on studies made by lumber experts cooperating with the Information and Education Service of the Department of Labor predicts that high lumber prices must prevail as an economic necessity. Twelve reasons are given. Of these the twelfth is one of peculiar interest:

1. Low stocks held by retail yards throughout the United States.

2. Curtailed production of mills during the last few years.

3. Recent restricted building operations.

4. Possible increase in foreign trade.

5. Decreased ocean freights; these having already been reduced 66-2/3 per cent.

6. Decreased supply of available timber and its distance from markets

7. Large amount of capital and uninvested money which may be made available for investment builders under proper financial direction.

8. Conscious effort on the part of wealthy operators to maintain a price level that will enable them to secure an equitable profit.

9. Announced policy of the West Coast Lumbermen's Association and other large lumber associations of maintaining wages at their present level as long as the high cost of commodities continues.

10. Unfilled orders actually held by mills.

11. Small probability of decrease in western freight rates which will enable western woods to compete extensively with wood from other sections.

12. Lack of intelligent reforestation by the government.

Forest Fires of Spontaneous Origin

A French scientist, G. Raymond, offers several interesting hypotheses to account for spontaneous fires. He notes first of all that such fires always occur under the same conditions - namely, when the weather is dry, hot, and windy, as for example during the blowing of the "Mistral" in southern Europe.

Mr. Raymond considers it possible that the dry and resinous branches of the pines might develop enough friction in a high, hot wind to strike fire. Again, minute drops of resin, spherical in form, might act as lenses to bring the sun's rays to a focus, thus setting fire to the inflammable materials around them.

A third suggestion is that, since the ground of a pine forest covered with needles and other decomposing matter often acquires a very high degree of heat in the summer months, even a temperature several degrees above 100°F., there may result catalytic effects in the presence of impalpable resinous substances.

Lastly, Mr. Raymond considers the effect of a possible engendering of frictional electricity in scraps of bark, pine needles, etc., driven hither and thither by the wind.

Laboratory Notes

Charles R. Thomas spent a few days in Washington but has returned to Madison.

Don P. Johnston has left Washington and will return to Madison toward the end of the month after a short vacation to recover from his detail.

Washington Notes

Captain John D. Guthrie writes from London that he is headed for Russi leaving it to us to guess what he is going to do there.

A. F. Hawes has been absent from Washington during the past week in connection with forestry extension work in Pennsylvania and New York.

Chief Engineer O. C. Merrill is now in the West making the grand tour and we were told not to look for him for some time to come.

J. H. Foster, who was identified with the Forest Service last year on war work, dropped in on us last week.

Major William H. Kobbe, formerly with the Forest Service in District 3, called at the Washington Office last week and had much to tell us about his experiences in France with the Gas and Flame Engineers. Major Kobbe is now detail for duty at Washington and is finding jobs for the returned soldiers.

Major C. S. Chapman, who was in France with the 20th Engineers, is ba in this country and called on his friends in the Atlantic Building.

J. Girvin Peters escaped the disagreeable weather of Washington last week by a run to sunny Tennessee.

W. D. Sterrett is engaged in making a summary of the needs of the different industries for timber supplies. So far he has taken care of the following.

Pulp and Paper
Vehicles
Furniture
Turpentine and Resin
Cooperage, Slack and Tight
Veneer
Car Construction and other Railroad material.

F. S. Baker, W. D. Brush, and J. W. Stokes have finished the field end of the walnut inspection work and are now in Washington ready for the next job.

W. Hoyt Weber is back with us once more after a western trip and is now busying himself preparing a final report on the principal projects by the Service in wartime uses of woods.

J. A. Mitchell returned to Washington last week after being down South for the past six weeks, and he expects to make his get-away from Washington within a few days. Mr. Mitchell will make the northern trip this time.

D-1, Northern District

The last of the eastern white pine raised at the Savenac Nursery was planted last fall and no more will be sown. This species has given remarkably good results in the planting work in the District so far as survival and growth go, both in the nursery and in the field. White pine gave better results than western white pine (Pinus monticola). The trouble is, however, that it grows so rapidly that the trees suffer badly from snow breakage. This is merely another illustration of the fact that usually local species are best.

D-2, Rocky Mountain District

Travelers on the C. B. & Q. Railroad through the sandhill region of Nebraska can hardly fail to note with a sense of relief the solid green of the plantations on the Nebraska Forest on the slopes of the sandhills facing the railroad. Additional slopes so located are to be planted this spring.

One of the big expenses in growing stock at the Monument Nursery is caused by the necessity of mulching the beds to prevent heavy winter killing. Planting Assistant Schrader made a test in the fall of 1917 of digging transplants in the fall, heeling them in, and covering the plants with a mulch over the winter. The stock so treated produced as good results when planted in the field in the spring of 1918 as other stock left in the mulched transplant beds over winter. The test is being repeated on a larger scale this year. If this method of caring for the stock over winter succeeds, it will reduce the area in the nursery to be mulched each fall by 84 per cent.

Planting operations for the season of 1919 began on the Nebraska National Forest March 26. Four rangers from various Colorado National Forests were transferred to the Nebraska to assist as straw bosses in handling the seventy men engaged on the job. Most of the laborers used for this work were supplied by the Federal Employment Bureau located at Lincoln, Nebraska. This office has now been closed because of the lack of funds, so that this means of securing labor which has given such excellent results in the past can no longer be looked to for assistance.

The annual Forest Service dance was held in Denver on March 22. About forty couples from the District Office, together with their friends, enjoyed a delightful evening stepping to the strains of a jazz orchestra.

The criminal libel case instituted in the courts at Cody, Wyoming, by Supervisor Allen against one Bert. Marvin, was withheld from the jury by the presiding judge upon a technicality and verdict of not guilty returned. The point on which the case was lost was that there was no proof that the defendant mailed in Park County, Wyoming, the letter containing defamatory statements against Supervisor Allen. The prosecution was unable to produce the envelope. In this connection, it is interesting to know that both civil and criminal grazing trespass cases were won last year against the same defendant.

The rocky eminences of Harney Peak, in the Black Hills National Forest, and Devil's Head, in the Pike, are soon to be crowned with lookout observatories. These are two of the principal lookout stations in this District. The plan is to make conditions as comfortable as possible for the observers in order that the highest degree of efficiency may mark their work.

The correspondence course on the National Forest Manual, its regulations and instructions, which was started a couple of months ago in this District, is meeting with unqualified success. Over 270 officers of all grades are now engaged in this study. Sets of questions concerning Administration, Protection, Trespass, Silviculture, Grazing, Lands, etc., procedure on the National Forests are sent out from the District Office, and an examination held every two weeks. Each examination consists of two lists of questions, one to be answered by reference to the Manual and related instructions, and the other to be answered without any help from reference books. After each examination, the average grade for each Forest is figured from the individual grades of the officers on that Forest. These Forest grades together with a list of men receiving the 20 highest marks, is sent out regularly to each student.

Every Forest officer in the District is required to take this course unless specially excused. Those who do not pass this year, will be required to take it over again in 1920. In the District Office, it is left optional with the Chiefs of the various offices as to who shall take the course or any part of it.

Telephone Engineer Kylie has just returned from a trip to the Cochetopa, Uncompahgre, and Holy Cross National Forests, at the headquarters of which he had conferences with the rangers. Mr. Kylie gave the rangers a practical demonstration course in telephony in order that all telephone lines under their charge might be brought up to the highest degree of efficiency before the opening of the fire season. The meetings held at Saguache, Delta, and Glenwood Springs were attended by over forty officers of the various Forests.

D-3, Southwestern District

A special rule that all stock over one year of age must be dehorned before being placed on the range on the Weiser Forest has been approved by the Forester.

The centralized purchase of fire tools, which was held up temporarily, will now be carried out on the basis of the estimate submitted by Supervisors last fall. Bids have been invited for shovels, planter's eye hoes, cross-cut saws, asphalt rakes, axes, mattocks, 8" and 12" files, axe whetstones, and extra handles for axes, shovels, and rakes. The Supply Depot will be called on to furnish the number of iron cots needed for the District.

Assistance is being given returned soldiers in getting their bonuses by making in the District Office photostat copies of discharge papers to be sent to the War Department in connection with their claims for bonuses. This will prevent the loss of the original discharges in transit.

Construction work on the Clifton-Springerville road was begun by the contractor on March 19.

Louis H. Waters, Master Engineer in the 29th Engineers, will shortly be restored to the rolls as ranger, which will probably be a tame job for him after his experiences at Chateau-Thierry, St. Mihiel, and the Argonne.

With deep regret announcement is made of the death of Ranger Robert Bingham, at the Grand Canyon, on March 30, from a complication of influenza and Bright's disease. Mr. Bingham has been a member of the Forest Service since 1917.

Two representatives of the Biological Survey engaged in the extermination of prairie dogs have been assigned to the Tusayan Forest. The Forest Service will be represented on this work by Rangers Rice, Ross, and Boscom, and Scaler Russell. The stock interests will cooperate on their range adjoining the Forest boundary.

D-4. Intermountain District

Forest Rangers W. T. Dobson, of the Kaibab, and Albert L. Long, Jr., of the Sevier, have resigned from the Forest Service.

Grazing Examiner Shoemaker went to the Manti Forest on permanent assignment April 1.

Grazing Examiner Palmer has gone to Elko for the necessary preliminary work in the establishment of a base line for triangulation survey.

Free Use and S-22 Areas

"The proposition of designating certain areas for free use and S-22 sales may be all right on some Forests, but after trying it out on each of my three districts I am convinced that it is not practicable where conditions are such as exist here.

Early in the season of 1918, I designated specified areas in each of the three canyons of my districts, from which free use and S-22 material could be obtained. I found that about 50 per cent of the applicants for such material had good reasons for preferring to go elsewhere for their poles or fuel. If there were an abundance of such material or sufficient so that it could be termed conveniently accessible then we would not be unreasonable in insisting that the material be obtained from such a specified area. But such material has been culled out from this district for so many years that now it is possible to find it in small quantities only, well scattered and in inaccessible or generally difficult places at the end of some steep road or out of a deep rough canyon.

In riding over the Forest looking after his cattle, etc., a permittee sometimes locates a small grove where he thinks he can glean a few poles or dry stuff for fuel and requests that his permit be issued for that particular place. Another applicant may be acquainted with only one road or locality and it would be an imposition to insist on sending him to some other vicinity where he was not acquainted and where it is difficult even at the best to obtain the material he desires. Then, too, most of the material taken is dead and down, the removal of which is highly desirable.

EDW. P. COX, Forest Ranger, Manti N. F.

Fifth Liberty Loan

The chairman of the Idaho State Committee in charge of the campaign for the Fifth Liberty Loan has called on the Forest officers in that State for their cooperative assistance and specifically requested that they call on the county chairman and local committees.

This request will be acceded to as far as it is possible for the Forest officers to do so without interfering with their main duties. The opportunities for effective work by Forest officers is very great.

D-7 Eastern District

The Pisgah Game Preserve heralds the arrival of a new buffalo. We have decided to name him "Zeb Vance" in memory of one of western North Carolina's most famous public men. He resembles Zeb in his sturdy independence and his fearless manner of looking at things generally.

Forest Supervisor Dieffenbach, who has been in charge of Pisgah Forest and Game Preserve since the middle of September, has returned to Washington to resume his work as Forest Examiner in Charge of Surveys.

The cloud on the title to the 3,000 acres of timberlands, forming a part of the Nantahala Area of the Pisgah National Forest, was removed as a result of the judgment obtained in the case of the United States vs. The Hiawassee Lumber Company when Judge Boyd signed the decree in favor of the United States. The case has been in litigation for the past ten years. The Government had lost the case at a previous trial. On appeal to the U. S. Supreme Court a new trial was ordered, which was held at Asheville in August, 1917, and the verdict of the jury was in favor of the United States.

D-7, Eastern District (continued)

The knotty problem of what to do with the chestnut trees which have become blighted is about to be solved by Supervisor Rhoades, who states that a number of beaver from the Adirondacks are soon to be put to work on the Pisgah. These intelligent animals are to be used in cutting down and bucking the chestnut trees into logs. The logs will be rolled into the ponds behind the dams of the beaver and when the ponds are full the dams will be opened and the logs driven down the river to the local tannic-acid plant. Here a second colony of beaver will chip the logs into suitable sizes for the leaching vats. The idea suggested itself to the local officers through the great shortage and high price of man labor. A big field is opened up here, and no one on the Pisgah doubts that the plan will be successful. This means chances for colonies in other Forests also.

An interesting phase of the question as to the best method of marking timber in hardwood sections has developed on the large timber sale on Curtis Creek of the Mt. Mitchell Forest. The timber sale contract calls for the taking out of nearly all of the chestnut, and inasmuch as some slopes are from 80 to 90 per cent chestnut, the labor of marking all the trees to come out became rather heavy. After a thorough discussion, the conclusion was reached that the best method to follow in cases of this sort was to mark the timber which was to remain uncut, particularly timber over the diameter limit and which was needed as seed trees. It is developing that this really is the best way to mark, because it gives a better conception of the character of the stuff which is to remain and which should remain than if all of the timber is marked which is to come out. Furthermore, it gives the officer in charge of the sale far more time to supervise the work of the woods crews and to do the scaling than can be done with the old method. Since the officer in charge has more time, he is also able to check up on the woods crews very frequently to see that they do not take out timber under the diameter limit which is supposed to remain anyhow. He is also able to point out defective trees under the diameter limit which are to be removed.

Acquisition

Forest Ranger R. C. Brown has been assigned to timber examination work in the White Mountains and he expects to be engaged on it for several months.

Forest Examiner C. E. Beaumont has been detailed to the War Department to make a valuation of the damages to timber at Camp Hancock, Augusta, Ga., caused by machine gun fire and timber destroyed in the construction of camp sites and ranges and wood cut for fuel. The chief difficulty with which Mr. Beaumont has to contend is the fact that a great deal of the timber has been entirely cut off and removed, necessitating placing a value upon material which no longer exists and of the amount of which no record was ever kept. Mr. Beaumont will be engaged in this work about a month.

WEEKLY BULLETIN

Forest Service - Washington Office

(Not for publication)

April 14, 1919.

War Memorial for the Department

A number of suggestions for the proposed war memorial in memory of employees of the Department who lost their lives have been received. No decision as to the form of the memorial has been reached, and all suggestions submitted will be given careful consideration by the committee in charge.

No definite action is possible until the committee has a fairly accurate idea as to the funds that will be available. Pledges are therefore requested at this time. Present payments are not desired. The money is not needed now. It is, however, very desirable to know the amount that will be contributed and members of the Department who are planning to participate are requested to forward their pledges at once.

Whither Are We Drifting?

The brevity and cold-bloodedness of the official obituaries of some of the old stand-bys, as chronicled in the various District publications and the Weekly Bulletin, cause many pangs. Is it that the members of the Forest Service are getting to be automatons, mere machines without emotions? Or is it that we have the emotions and are holding ourselves in such restraint as to stifle any inclination to say a few kind words of parting to the man who has been an employee for a good many years?

It seems to be the mere fact that a man has been a member of the Forest Service for five, ten, or fifteen years is worthy of some consideration per se. At least escort the parting fellow worker to the door and give him God Speed, rather than kick him through door and all. There is no need of a highly colored eulogy. Much good will be done if we give nothing more than a mere recital of what the man did. Everything he has done in his long years of service may not be so very cute, but without doubt much of it will stack up mighty well with what the others have done or are attempting to do.

There seems to be a danger in the Forest Service of our getting cold-blooded expecting a man to do good work with never a compliment to him for it, but always being ready to fall on him for some failure. Efficiency is fine and something we should strive for, but of what value is it if we lose all sense of courtesy and consideration, a little bit of which will sweeten the daily humdrum routine.

The editors of the Weekly Bulletin have no facilities at hand to get together the facts concerning the members in the field. Therefore when a fellow worker resigns after five, ten, or fifteen years of service, send in an account of what he did and what his future plans are. He will feel much better for this little thoughtfulness and no doubt you will also. At least think it over.

Kentucky County Agents and Farm Forestry

A summary of replies received from the county agents in Kentucky in response to a questionnaire sent them to ascertain the existing needs in farm forestry shows much of interest.

Many of the agents consider that the most important forestry problem is the improvement and better care of the woods and woodland, which includes the prevention of forest fires and careless cutting, and the conservation of young timber and maintenance of forest growth on steep slopes.

The utilization of waste land by the planting of forest trees for fence posts is also important.

The agents believe that the farmers are selling their forest products without a full realization of their value and that there is need for education along these lines, and indicate that they are themselves unable to assist very materially in this, because of their limited knowledge of how to make timber estimates.

There seems to be need for some means of giving the agents a better knowledge of timber values and estimates, so that they may in turn educate the farmers as to the full value of their timberlands.

Mississippi County Agents and Farm Forestry

The replies to the questionnaire in Mississippi indicate that the County agents consider the biggest forestry problem in the State to be the protection of young timber and cut-over lands from fire.

In the northern and northwestern sections of the State it is felt desirable to plant black locust to check gullies and utilize worn-out hill lands.

Some of the agents consider it desirable to restock lands and provide fence posts. Others suggest that information be made available covering the growing of timber on the farm woodlands and the checking of waste in logging. The chief products at present are mill logs, cross-ties, long poles, piling, firewood, and charcoal. There is great need for means of informing the owners as to the value and amount of their timber before they sell. At present the buyers are the only individuals fully informed as to the value of the timber.

Farm Woodland Notes

Farm forests in 157 counties east of the breaks of the plains in Texas comprise from 15 to 50 per cent of the total farm area. In spite of the careless methods of management and marketing, the wood products derived annually from the farm forests of Texas are valued at over 12 million dollars. The bulk of the second-growth pine timber is owned by thousands of individual farmers, and in the future the farmer will constitute by far the most important factor in producing the lumber supplies; for 90 per cent of the big mills in Texas will be cut out within the next 8 years.

Cooperative Investigative Work in Louisiana

A plan for cooperative investigative work on forest problems in Louisiana was discussed recently with Dr. A. B. Dinwiddie, President of Tulane University, who called on the Forester.

New Classification for Woods

Some liberties have apparently been taken in the classification of the different species that go to make up the lumber products shipped out of St. Louis, according to the lumber journals.

The new barge tariff on lumber from St. Louis southward makes a higher rate on "chestnut poles" when manufactured from cherry, walnut, mahogany, and certain other high priced woods, than when they are manufactured from chestnut.

The same basic principle of rate making applies to mahogany fence posts and mine props. Cedar shingles and posts are classified with cabinet woods merely because cedar as a wood falls in that category.

Oregon Road Condemnation

The right of the State to condemn land necessary for roads in Oregon will be broadened to permit it to create roads necessary to promote the transportation of raw products of mine or farm or forest necessary to the development and welfare of the State and will be submitted in referendum to the people at the next election. The necessary joint resolution has passed both branches of the State legislature.

Forestry in Japan

They tell us that in Japan all the wooded land is carefully guarded, practically every tree listed, and not one allowed to be cut down except with express permission of the government, and then not unless another tree is planted in its place. About four-sevenths of the forests of Japan are owned by the State, and there are about 50,000,000 acres of forest land, including oak, maple, birch, willow, cedar, pine, cypress and fir.

Forests in Sweden

Nearly half of Sweden is covered with forests and this wealth combined with the water-power resources to be found in the numerous waterfalls and rivers will put Sweden in the first rank as one of the world's leading industrial countries.

The relative forest areas in various European countries are:

Sweden	47.6	per cent
European Russia . .	38.5	" "
Austria-Hungary . .	31.7	" "
Germany	25.9	" "
Norway	21.0	" "
France	18.2	" "

White Pine Timber Resources in New Zealand

Native white pine is extensively used in New Zealand to pack agricultural products.

Estimates made during 1918 place the present supply as 483,584,744 superficial feet on Crown lands and 451,535,000 superficial feet on private lands, in the provinces of Auckland, Wellington, Westland, and Southland. No returns were received from the five remaining provinces but it is known that the supply of white pine is very small in the provinces, probably not more than 50,000,000 superficial feet.

Spruce Gum in the Northeast

More than 1,500 tons of crude spruce gum are estimated to be harvested annually in the State of Maine alone.

In years gone by spruce gum was harvested by the lumberjacks, who collected the choicest bits in the course of their regular work. But as this class of laborers was supplanted by foreigners, who knew nothing of spruce gum, dealers experienced great difficulty in procuring the gum and so the professional gum gatherer got into the game.

Gum is collected throughout the year, although fall and winter is the most popular season. During the summer black flies are a nuisance and the collectors lose much time in fighting them off.

Pickers usually work in pairs, mainly for sake of sociability. A small hatchet is used to remove the gum, which is dropped into a small pan or even a hat Oftentimes the axe is fitted with a hollow handle into which a pole can be fitted thus enabling the gummers to reach lumps high up and ordinarily beyond reach.

Hamilton with an annual capacity of 115,000 feet and a capital investment of $300,000. The three mills employed a total of 107 men.

The lumber industry continued its growth and by 1914 there were 98 mills in operation, with an annual capacity of 532,000,000 feet and a capital investment of more than $15,000,000 and employing 4,500 men.

At present it is stated that there are 105 mills, of which some of the largest have an annual capacity of from 60,000,000 to 80,000,000 feet. In most instances planing mills are operated in conjunction with the sawmill.

With the growth of the sawmill output there has been a corresponding development of the logging industry. The first real logging camp was built at Bonner, and the second at St. Regis. All the latest devices for efficient logging are in use and the logging industry is of the utmost importance.

American Research Council

The American Research Council has been reorganized in the effort to effect a better representation of the investigative organization concerned in its work. Each society interested will have a representative in this Council. In addition nine members at large will be appointed.

A fund of $500,000 has been secured for a fellowship in chemistry and physics for a period of five years. Chemists or physicists working in the field of wood utilization will probably be entitled to these fellowships.

History of the Forests

The circumstances that attended the selection and designation of areas for National Forest purposes are full of interest. Sometimes the interest is local; more generally, however, it is national. Not the least interesting is the selection of a name for the designated area. Some Forests have had a procession of names; others have retained their original names. Whatever happened, there is a background in each instance.

Supervisor R. W. Allen, of the Shoshone, makes the suggestion that the Weekly Bulletin start a series of historical reviews on the individual Forests, these reviews to concern themselves with the conditions on the Forest described and not with general policy. The suggestion is made that these accounts start in with the name of the Forest and give derivation and correct pronunciation of the name.

The editors will gladly provide space for such a series of articles and they go Supervisor Allen one better by suggesting that the items come from the field rather than be compiled in Washington. We shall, however, gladly cooperate with the field men in this by supplements from data available in Washington, if such is necessary, or if there are any points on which information is not to be had in the field.

Forester Wanted for New Zealand

New Zealand has requested the Forest Service to recommend a well qualified forester for a $4,000 position in that country.

Forestry in New Zealand

"National forestry in New Zealand has been transferred from the region of academic discussion of botanists and of scenic reserves to the region of trained foresters and of practical politics" says the Australian Forestry Journal.

The preservation of the necessary proportion of forest is one of the Government measures to be considdred in the present session of Parliament.

It is claimed that the clearing off of timberlands has advanced so far in New Zealand that settlers are in imminent danger of being deprived of their supplies of timber and firewood. A campaign is under way to terminate the experiments with exotic species and instead to protect the native forests against fire and improve them through controlled use.

F. A. Silcox Enters Private Life

F. A. Silcox, District Forester at Missoula, Montana, but on leave for special war work the past eighteen months with the U. S. Employment Service, will not return to the Forest Service. Mr. Silcox has wound up his special work and is to be industrial agent for the printing industry with headquarters at Chicago.

A Familiar Story

"The field force absolutely failed to come through with anything for this issue. It's up to you fellows to keep the News Letter going."

This quotation is from District 5's News Letter and is repeated by the editors of the Weekly Bulletin because it is an expression of our own troubles. Contributions from the field men are solicited and will be greatly appreciated.

Washington Notes

Assistant Forester W. L. Hall has gone to Chicago to attend the American Lumber Congress in session from April 14 to 17 inclusive.

Paul D. Kelleter gave an illustrated talk on forestry at Camp Meade last week to soldiers who had just returned from overseas. Mr. Kelleter has been booked for a return engagement for three nights during the present week. These talks are made under the auspices of the National War Work Council.

Major George A. Bentley has informed us here in Washington that he has resigned his commission with the army and that he does not intend to return to the Forest Service. Mr. Bentley is to be local representative for an adding machine company and we all believe him when he says that the machine is the best on the market.

Madison Laboratory

There is hope ahead. The Laboratory has launched a bulletin which is to chronicle day by day for the information of its members news of the happenings of the day.

The editors of the Weekly Bulletin in the Washington Office will scan these bulletins with a peeled and expectant eye and hope to find many items of such general interest as to warrant repetition in the Weekly Bulletin for the benefit of the entire Forest Service.

Two new Riehle testing machines have been installed in the section of timber mechanics. Getting these machines makes it possible to return the machines borrowed for war work from the universities of Kansas and Alabama and the Kansas Agricultural College.

Dr. Otto Kress, after an absence of more than a year, during which time he was engaged in private work, has returned to the Laboratory and assumed charge of the pulp and paper section.

Madison Laboratory (Cont.)

There are 225 electric motors buzzing in the Laboratory. They range from 1/8 horsepower to 150 horsepower.

District 1 - Northern

D. D. Bronson, of the Washington Office, spent last week in District 1 g ing over allotment figures.

S. T. Simons, of Engineering, is back at his desk in the District Office after many months of service in France. With his company he was held for three months at St. Nazaire, but finally was ordered to embark for the United States and reached Newport News, Va. on March 10. He brought with him a few souvenirs of interest--a spiked helmet picked up in a dugout, and a little penciled map with German inscriptions showing gun emplacements which was found fastened to a tree near Limey. Mr. Simons belonged to the 2nd Battalion, 29th Engineers, a flash and sou organization which located enemy guns on the west front. This was done by timing the flash of the gun and the roar of the shell as it left the weapon.

Snowshoe Trip on the Selway

Supervisor Koch and Scaler Hodgins of the Iolo made a 60-mile snowshoe trip from March 14 to 23 into the Powell District of the Selway Forest, to determi winter snow conditions and the location of the winter ranges of the elk and moose A fresh fall of a foot and a half of loose snow on top of the eight feet in the Lolo Pass made snowshoeing over the summit very heavy and Hodgins unfortunately strained a tendon in his right leg, making it impossible to go as far down the Lochsa River as they had planned. The fourth day of the trip the weather turned cold and the snow crusted, making perfect snowshoeing along the frozen rivers. It was found that there is no game whatever wintering in the upper Lochsa above the Wendover canyon, five miles below the Powell Ranger Station, where five or six el were located, wintering in three feet of snow. The main body of the elk are supposed to be eight or ten miles further downstream in the neighborhood of the Hot Springs.

Hodgins had a pretty stiff time getting back over the hill to Iolo Sprin but by traveling before daylight when the crust would bear without snowshoes he succeeded in making the trip.

An Indignant Permittee

Dear Sir:

Your last letter a lot more explanatory, and not so officious, appeals t me in a different light.

I have forwarded it to my partner, and if our cattle will be placed in that farmers herd and handled by one herder, we want our permit for 100 head.

When Mr. ____________ gets back, will get my contract and come over, or mail it to you for your inspection or edification. Can also furnish you a copy my birth certificate, baptismal and marriage certificate; will also give my heig weight, color of hay and eyes, all ready for framing.

Well all this sounds rediculous, but not more so to me at least, than t Governmental rigemorole about Elk preservation etc. etc. etc. How much income t do they pay. Well,

Yours very truly,

A good start for a successful plantation has been secured on the Flat R project on the Iolo Forest. Last spring over 500 acres of western yellow pine w planted on this project. A fall count showed an average survival of 81.4 per c The stock used was chiefly 1-2 transplants, but on about 100 acres of the better sites 2-0 stock was used. The influence of site was so marked that the survival of this seedling stock was higher than with the transplant stock planted on the more severe sites.

District 1 - Northern (Cont.)

In the Wallace experimental area, plots have been established to test the relation of growth and survival of western white pine to the size of seed. So far no consistent relationship has been developed. With western yellow pine, however, tested at the nursery and in Montana plantations, the better results from the use of large seed are plain.

Gratifying progress in organizing stock associations on the Forests of the District is being made. The new standard constitution made available last year is forming the basis of these new organizations and greatly facilitates the work incidental to forming an association. Many of the older associations are reorganizing in accordance with this new constitution.

Imagine G. A. Smith, R. H. Rutledge, C. I. Porter, J. W. Girard, E. F. White, and E. W. Kramer occupying three small N. P. upper berths from Missoula to Spokane--in the interests of efficiency and economy!

District 2 - Rocky Mountain

The recreational advantages of the Forests in this District are to be brought home to all correspondents with the District Office and the supervisors. For this purpose each supervisor has been supplied with a rubber stamp bearing a recreational legend, varied with the different states in the District. It is planned to have these legends imprinted in the lower left hand corner of all outgoing mail. Green ink pad will be used to make the impression readily noticeable. The first set of rubber stamps distributed read as follows:

COLORADO'S
NATIONAL FORESTS
VACATIONLAND
SUPREME

FOR SPORT OR PLAY
COME TO
WYOMING'S
NATIONAL FORESTS

ENJOY
A COOL VACATION
IN THE
BLACK HILLS
NATIONAL FORESTS

VACATIONLAND
OF
LAKES AND WOODS
MINNESOTA'S
NATIONAL FORESTS

The recreational features of the National Forests are set forth in an attractive exhibit arranged by the Forest Service in the window of the Tritch Hardware Company of Denver, wholesalers in sporting goods and hardware. This exhibit shows a summer home site on a National Forest, with model houses, and an improved camping ground with shelter house, fireplace, etc. Miniature fire, trail, and ro signs are scattered throughout. The most attractive feature of the exhibit is a lake stocked with small trout and a creek running through the scene into and out of the lake. Mountains are cut out in relief and painted to show foreground and snow-capped peaks in the distance. Just back of the mountains, by a lighting arrangement, is shown the setting sun and a sky drop with clouds on it, painted to take the proper reflection from the setting sun. Small natural trees are scattered through the scene. The window used for the exhibit is 6 feet deep and has a 16-foot front and 19-foot back, all of which is utilized by the exhibit. The cost of installing the exhibit was borne jointly by the Tritch Hardware Company and the Forest Service, and no advertising matter of any kind appears in the window, except a sign bearing the following inscription:

ENJOY YOUR
VACATION
in
COLORADO
: NATIONAL FORESTS :
: Beautiful Summer Home Sites :
: Fine Camping Grounds :
: Fishing - Hunting :
: Health - Rest - Recreation :
:______________________________:
VACATIONLAND ALLURING :

The exhibit is attracting considerable attention and it may be shown later in Pueblo and Colorado Springs. Inquiries concerning summer home sites have already resulted from the installation of this exhibit.

Lieut. Fred B. Agee, who for more than a year has been in France with the 10th Engineers, returned to Denver during the week and will resume his duties as Deputy Supervisor on the Pike Forest.

Supervisor Cook and Landscape Engineer A. H. Carhart spent several days during the past week determining and surveying the location for the new Pikes Peak bridle trail. This will furnish the third principal route for climbing Pikes Peak which is now accessible by an automobile road and a cog railroad. Location work has so far been done only as far as the Fremont Experiment Station. This is the first of the minor road and trail projects to be built under the new Federal Road Fund. Work has already started and it is expected the trail will be complete by the end of the current month.

Chief Engineer Merrill and T. E. Brook, of the Washington Office, were Denver visitors last week.

Final order of confirmation of the judgment of the court in the condemnation proceedings instituted for the acquisition of 15.37 acres of ground adjoining the Bessey Nursery on the Nebraska Forest, has just been received. This area is a triangular strip of land lying between the subdivisions on which the nursery was established and the Loup River. Because of defective surveys in that region, it was believed that this land belonged to the Government. A resurvey made by the General Land Office in 1915 disclosed the fact that this was private land, but the owner was unreasonable and held the land at $200 per acre, probably because it appeared necessary for the Government to acquire it, having placed seedbeds and some permanent improvements upon the area. The owner was awarded $915.00 for the tract, about $60 per acre, and the entire costs, including publication of notice and all court fees, amounted to less than $62 per acre.

The scarcity of labor made it necessary to depend very largely upon boys to handle the work at the Cass Lake Nursery on the Minnesota Forest. The boys were not wholly satisfactory but the net results were not bad, since no severe losses were experienced and the work was done.

Definite plans for an experiment in planting on the Pike Forest have been adopted in accordance with the Forester's policy letter No. 2. Approximately 100 acres in South Platte Canyon in an old burn which has been grazed under yearlong permits will be planted with yellow pine from the Monument Nursery. Among the points to be studied are the effect of yearlong grazing on the erosion so prevalent in the gravel formation of much of the Pikes Peak region, the possibility of checking erosion by planting, and the effect of such grazing upon reproduction,

District 2 - Rocky Mountain (Cont.)

which in this case will be mainly in the form of planted trees, since there are very few natural trees on the area. Part of the area will be fenced and part left unfenced. There is no opportunity to secure data on this subject in the plantations of the Colorado Springs watershed, as no grazing is allowed there. Since nursery stock will be used, this experiment will give no indication of the effect of grazing on the establishment of seedlings by natural means on similar sites and under similar conditions.

District 3 - Southwestern

The oil fever has penetrated Arizona and New Mexico, and as a result the Forest Service will probably profit thereby. Material is needed for the construction of oil rigs and houses at the various oil centers and the District figures that this material will come from the Forests. The average derrick used in drilling for oil contains from 18,000 to 25,000 board feet for timber. The sizes vary from 1" x 3" x 16 feet to the walking beam, which is 14" x 30" x 20 feet.

Carl H. Riblett, Master Engineer with the 20th Engineers (Forestry) has returned to this country and will resume his job as ranger on the Coconino as soon as he has recovered from an attack of influenza contracted since his return.

A total of 3,357 signs was made in the District sign shop at an average cost of 18½ cents per sign, exclusive of contributed time.

Arrangements have been perfected with the Coast and Geodetic Survey for establishing the triangulation control work of the areas within National Forests upon which topographic work will be done this season. The triangulation work will be done by the Coast and Geodetic Survey but paid for by the Forest Service. Work will be begun on the Tonto and Prescott Forests.

Albert Hendrix, formerly ranger on the Tusayan, has returned from military duty with the 20th Engineers in France. He has been appointed Surveyor and will be in charge of an entry survey party in this District.

The first fire of the season thus far reported occurred on the Weed District of the Lincoln Forest on March 18. It was a Class B fire.

Forest Ranger Robert S. Bingham, who died at the Grand Canyon on March 30, expressed the desire to be buried in the new cemetery at the Canyon. His parents consented to this and he was buried in his Forest Service uniform under the pines of the Forest. Though he was at the Canyon but a relatively short time, Mr. Bingham won a very large place for himself in the hearts of the people with whom he had come in contact in a personal and official way.

The cooperative agreement for the construction of the section of the Highrolls-Weed road from Highrolls to Cloudcroft has been executed by Otero County. This agreement provides for the county putting up $19,500 and the Federal Governme $19,500. The cooperative agreement for constructing the Apache Camp-Soldier Camp section of the Oracle-Soldier Camp road was executed by the Pima County authoritie on March 20. This agreement provides for the county contributing $24,000 and the Federal Government $28,000.

The high standard for lumber camp sanitation enforced in the District has set up a standard for sanitation around ranger headquarters that keeps the men on their toes to maintain. It is felt that this high standard around the ranger headquarters is necessary not alone for personal self respect but because of the official character of their employment, by reason of which they are representatives of the Government of the United States. The position demands a high standard of personal neatness and a high standard of cleanliness in our houses and surroundings.

District 4 - Intermountain

Admonitions are going out from the District office to the field officers that they give the stock of fire-fighting tools the once over.

Forest Ranger H. A. Cheeseman has been restored to the rolls and assigned t the Bridger Forest. Mr. Cheeseman has been in military service since 1917.

Grazing Inspector James T. Jardine was due to reach Ogden last week to discuss final arrangements for grazing reconnaissance and grazing studies.

District 5 - California District

Assistant District Forester Frank C. W. Pooler of District 3 is making District 5 an official visitation and incidentally telling us about recreational uses.

Ranger Williams, of the Lassen, claims the record for completed sign-boards during the past winter. He averaged 5.6 boards per day for the days worked and completed 50 signs.

Forest Inspector Charles S. Brothers, for eight years connected with the Office of Lands in the District Office, goes to Albuquerque where he will expound the law as Assistant to the Solicitor vice M. M. Cheney, who has resigned to practice law at Prescott.

The end of the land classification work in this District is in sight. The last two reports are about ready to be forwarded to the Forester for approval. This work has, during the past seven years, been occupying pretty steadily many of the regular force and many special men.

For the 17 Forests in the District, the gross area is 24,156,392 acres; alienated, 5,217,483; net area, 18,938,909 acres. The Forest area is classified as follows: timbered, 46 per cent; woodland, 10 per cent; brush covered, 34 per cent; grassland, 2 per cent, and barren, 8 per cent.

District 6 - North Pacific

Assistant Forester E. A. Sherman and J. T. Jardine, Inspector of Grazing, from the Washington office, were in Portland last week, leaving Sunday night (accompanied by District Forester Cecil) for Spokane to attend the District Forester's meeting.

Eagle Creek Camp and Picnic Grounds were open to the public Sunday, the buildings being unlocked, water turned into the pipe lines, and tops replaced on the concrete stoves. Ranger Wiesendanger reports over two hundred automobiles visited the grounds during the day. Many of these brought quantities of smelt dipped from the Sandy River to be cooked on the picnic grounds.

Ten thousand people from Portland and vicinity, it is estimated, visited Troutdale, on the Columbia River Highway, Sunday and witnessed the annual run of smelt. Many of the visitors were equipped with nets, scoops, basins, and other apparatus for dipping the fish from the stream. The fish were so plentiful that everyone was able to secure an ample supply after a few minutes of effort. Nearly every car returning to town carried a gunny sack of smelt on its running board. Parties without equipment for catching them themselves would purchase the fish for a cent a pound. The smelt run in the Sandy starts without much preliminary warning, continues for ten days to two weeks, then ends suddenly and the river, which has been fairly teeming with the fish during that time, apparently contains them no more.

One thousand cords of dead and live shingle-bolt timber on the Nisqually River, on the Rainier, has been awarded to A. C. Young, of Tacoma, at a stumpage price of $1.20 per cord. The bolts will be logged to the Nisqually River and sawed at the Young mill, several miles below the sale area. The timber involved is a fragment of merchantable timber adjacent to old cuttings in both Government and private timber.

Five bids were received for the ten tons of cascara bark stumpage on the Siuslaw, and opened on April first. The sale was awarded to A. C. Lake, of Noti, Oregon, at five cents and one mill per pound for dry bark. This is the first sale of chittim, or cascara, bark large enough to be advertised and is bringing the highest stumpage price ever received for National Forest cascara bark. The bark will be transported by pack horse and sled over four miles of trail to be constructed by the purchaser. It will then be loaded upon wagons and hauled fifteen miles to the railroad. The bark is extensively used in the drug industry for its yield of cascara, and the wholesale price offered is now about thirteen cents per pound. Cascara trees are small, averaging less than forty feet high and rarely being as large as twenty inches in diameter. The distribution is limited, the tree occurring chiefly in the Coast Mountains, of Oregon and Washington, and to a less extent on the west slope of the Cascades. It is tolerant of partial shade, but cannot stand the denser cover of Douglas fir and other conifers. Over one hundred thousand pounds of cascara bark stumpage was sold from the Siuslaw last year, and a lesser amount from other Forests.

District 6 - North Pacific (Cont.)

The causes of forest fires in Oregon for the five years 1914 to 1918, both inside and outside the National Forests, have just been tabulated by Mr. Talbott. During the five-year period the following totals accumulated:--10,079 fires were reported, destroying 1,706,048 M.B.F. The total damage to timber, logs, and logging equipment for the five years was $2,022,117.74. Total area burned over, 1,240,910 acres. Classified by causes, the fires appear as follows: Railroad, 262; lightning, 2,093; incendiary, 2,274; brush burning, 960; campers, 1,752; lumbering operations, 314; unknown, 1,994; miscellaneous, 265; stock fires, 165. (This latter is a classification of fires outside the National Forests. Similar fires within the Forests are classified under other heads.)

Wind River Nursery

Because of labor shortage last year women were employed in transplanting trees at the Wind River Nursery. Their work was very satisfactory, and several of them earned higher wages when engaged in piece work than the men. At the beginning of the year the nurseries in District six contained a total of five and one half million trees, 70 per cent of which were Douglas fir, 20 per cent true fir (noble and silver), and the remainder western white and yellow pine.

In shipment of nursery stock to planting projects this year the trees will be packed in burlap rolls instead of boxes. The burlap can be returned and used again several times. It is expected that this method will be considerably cheaper. Trials made last year indicate that the trees arrived in as good condition as when packed in boxes.

District 7 - Eastern

A crew of five men to assist E. J. Mead in the Nantahala Watershed timber survey has at last been gotten together by Supervisor Shields. The work is to begin on April 15. About 14,000 acres are to be covered by the survey and it is estimated that about 60 million feet of timber are on the area.

Dehorned stock only will be permitted to graze on the Wichita Forest, as a result of a special rule just adopted by the Wichita Cattlemen's Live Stock Association. More than 4,700 head graze annually on the 50,000 acres included in the Wichita Forest. Red cedar is one of the most important species of timber growing on the Forest and the special rule permitting dehorned cattle only was adopted as a silvicultural necessity. It was discovered that the cattle found the small cedar seedlings and saplings very convenient on which to rub their horns. This habit has worried the little cedar trees to such an extent that the injury done has become very noticeable. To obviate further injury to the tree growth, Supervisor Rush and the cattlemen became convinced that it was to the best interest of all concerned to adopt the special rule for dehorning the cattle using the range.

Acquisition

National Forest Examiner H. G. Wood, who was detailed during the war to the Hide and Leather Section of the War Industries Board where his chief work was in connection with the supply of tannin stock, has submitted to the Branch of Research a report on tannin materials.

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WEEKLY BULLETIN

Forest Service - Washington Office

(Not for publication)

April 21, 1919.

Forester Proposes National Lumber and Forest Policy

Colonel Graves, in a speech before the American Lumber Congress, at Chicago, on April 16, advocated a comprehensive program of public aid to the lumber industry, combined with the enforcement of measures to protect the public interest in future timber supplies. He pointed out that, although the lumber industry has been seeking Government aid along various lines to help it get on a more stable basis through curtailment of production, relief from present methods of taxation, price standards, and in other ways, it has failed to recognize any obligation to provide for forest replacement after cutting.

While the injury and loss that accompany demoralized industrial conditions are necessarily of public concern, the question of forest renewal and growth on cut-over lands now left unproductive is still more important. This question is of vital interest, Colonel Graves declared, not only to the public but also to the owners of timberlands. "We have enough nonagricultural land," he said, "to produce for all time lumber in abundance, for ourselves and for export. The public must share with the owners both the responsibility and the burden of securing the essential objectives. Those sought by the public are fundamentally the same as those needed for the permanent well being of the lumber industry. It is necessary to plan a program broad enough to accomplish them.

I am ready to advocate a policy more far-reaching in all respects than has generally been offered. I would afford whatever public assistance is needed to make possible the conservative handling of our forests, and I would then make fire protection, conservative production of lumber, and right methods of removal a matter of requirement, with such public direction and control as is necessary to realize the aims desired by the public."

"A comprehensive policy of forest development," said Colonel Graves, would make for permanent mills, place timber on the market only as it is needed, protect the present resource, classify the lands, encourage agriculture, and secure tree growth on nonagricultural lands. Timberlands would be placed on a sound basis of management instead of a speculative basis, and industrial plants given a permanent life. The resulting labor conditions would attract men who want to settle down instead of to migrate. The public would have timber in abundance at reasonable prices, and could afford to give its financial credit and authority if its interests are safeguarded by adequate control in public hands.

"We have the problems to solve," he concluded, "and we can not continue to ignore them. Public demand for action is increasingly urgent. It should be in ac accordance with broad constructive plans rather than by piecemeal legislation by different states. I am asking for cooperation in laying the groundwork for a national policy, and have initiated a series of conferences to this end. I hope that lumbermen will concur in the need of such a movement, and will join in the undertaking to work out a constructive program."

Army Aircraft to Fight Forest Fires

Army airplanes and captive balloons will cover portions of the National Forests of California, Arizona, New Mexico, and other states this summer, to aid in detecting and suppressing forest fires. In compliance with an order from Secretary Baker directing the Air Service to cooperate with the Forest Service in this work, conferences are under way to determine where and to what extent the air scouts will supplement the forest rangers.

That there is a distinct and important place for aircraft in fire protection of timberlands is regarded as beyond doubt, but experimental trial of methods and possibilities will have to be the first step. This is now being planned for the coming fire season. Army airdromes and bases will be utilized for the experiments. Some of the bases near enough to National Forests to be used advantageously are the flying fields at San Diego, Riverside, and Arcadia in southern California. Other points in the West and in the East are under consideration,

Army Aircraft to Fight Forest Fires (Cont.)

including one near the White Mountains in New Hampshire.

One of the interesting possibilities to be tested is bombing fires to put them out. It is believed that bombs charged with suitable chemicals can be used with good results. Another plan to be tested is transporting fire fighters by dirigibles from which ladders can be lowered to the ground. The chief use of the aircraft this summer, however, will be for fire protection.

Lookouts in a very broken country, cut up by deep canyons or where mountain ridges obstruct the view, or in a flat country that affords no good points of vantage, are often unable to pick up all fires quickly by the rising smoke, or to locate them accurately. For precise location the system in use depends on triangulation through reports telephoned from separate observation points. Airplanes would use wireless in reporting fires, as they have done in communicating with the artillery, and would locate fires by coordinates in the same way that gun fire in war is directed to a particular spot or object.

From the army standpoint, the use of aircraft in protecting the National Forests affords a valuable opportunity for training fliers and developing further the possibilities of aircraft and the art of flying.

Southern Extension Directors Discuss Farm Forestry

A conference was recently held between members of the Forest Service and the Extension Directors of the Southern States, at which the question of the organization of the extension work in farm forestry in these states was gone into with especial reference to its relationship to the regularly constituted State forestry departments. In Maryland, Virginia, and Tennessee, the State Foresters are acting under a cooperative project with the Federal Forest Service and State Extension Divisions as the extension specialists in forestry. In North Carolina and Georgia, forestry specialists are on the regular staff of the Extension force. The discussion clearly brought out the very important fact that no general form of organization could be laid down as applicable to all states, but that each State itself had problems of organization which it was absolutely necessary to consider and which would very largely determine the method of organizing the State's forestry work.

The general opinion was given that the present arrangement is proving satisfactory in view of the limited calls on the part of county agents and farmers for assistance, but as farm forestry becomes better understood, and especially the opportunities for increased profits from farm timber come to be more fully realized, there should be a regular specialist attached to the extension force. In other words, the Directors are looking forward to the handling of farm forestry along similar lines with animal industry, agronomy, etc. There was little, if any, indication that they foresaw any serious apprehension on the part of the State foresters regarding the existence of two separate forestry organizations within a single State. In North Carolina two organizations now exist, a State forester with headquarters at the State University and an extension forestry specialist employed and stationed at the Agricultural College, Division of Extension.

Directors from Virginia, Maryland, West Virginia, Tennessee, Alabama, and Oklahoma discussed the most important classes of forestry needs in their respective states, and the opinion was expressed by the Directors from West Virginia, Alabama, and Virginia that regular cooperative extension should include work with private companies and large owners as well as small individual owners. The timberland holding companies in the West Virginia coal districts were mentioned as examples.

Several Directors from states not at present doing forestry work expressed the desire to add forestry as a regular project in their next year's agricultural program.

W. R. MATTOON.

What of the National Forest Fish Ranges?

An interesting subject practically untouched and facing the Forest Service officers who have set as an ideal the production of the greatest returns from the National Forest areas is the fish-range problem. This is similar to stock-range problems, differing to the extent to which the sheep eat the forage plants and are in turn eaten by the cows upon the fish ranges.

Some one has likened the present procedure in fish culture to the method of the sheep grower who after rearing lambs on the bottle turned them loose in an unexplored forest to shift for themselves.

The gathering and hatching of fish eggs and rearing of the young fish on artificial food in hatcheries has been brilliantly successful. This is only the first step, however, How these little fish, when turned loose in ford and stream, find themselves a means of livelihood is the unsolved fact of the problem. Planted here they seem to thrive; there they fail. Every planting in a new place is more or less of an experiment.

The day is coming when he who wants fish fresh from the water will have to raise them. This does not mean that there will be no fish in the future. It only means that fish-raising is going the way that wild-pig raising has gone. When the game began to fail--venison, wild turkeys, etc.--the pioneer began to raise pigs. At first he gave them little attention except at killing time, and furnished them no food. He raised them about as we raise fish now. He turned them loose in the woods to forage for themselves, as we plant fish fry in the streams. They ranged the whole area where their food grew.

Nowadays, thousands of hogs are raised where one was raised then, but they do not run the range; they are kept in small lots, and the broad areas are devoted to raising forage for them. The present-day method of obtaining our meat supply is very unromantic as compared with chasing a razor-back with a shotgun through the woods at the end of the acorn season, but it is the inevitable way of progress in animal husbandry. The fish forage problem is less simple than is the raising of pigs on clover, for at least two reasons:

1. Plant food is not eaten directly by the more valuable fish, and often there are a number of turnovers of the foodstuffs before the fish are reached. For example, diatoms and other synthetic plankton organisms are eaten by water-fleas and midge larvae that are, in turn, eaten by little fish that form the food of big fish. There must be at least two turnovers--one each of plant and animal forage--since desirable food fish are carnivorous.

2. There may be one or more changes of diet furthering development. Thus, the pike when newly hatched eats certain water-fleas, fishing them one by on with automatic regularly timed snapping of its jaws. When grown a little larger, it eats small insects and mixes small fish in its diet, and as it attains full stature it restricts its diet to frogs and larger fish. When grown it takes hardly anything smaller than a golden shiner.

Studies of the foods of common sunfish have shown that, when one inch in length, their food is predominantly entomostraca and midge larvae of the larger size, together with small mayfly nymphs, and minute snails; when three inches in length, it is grown midge larvae, mayfly nymphs, and caddis-worms. At this size, apparently, the diet of entomostraca and small midge larvae is outgrown, and the fish are seeking bigger game. At three inches in length, this fish is itself the favorite of adult bullheads.

Our best fish are carnivorous, and the animals they eat are chiefly a few hardy, prolific, and widely distributed herbivores, such as water-fleas, scud midge larvae, mayfly nymphs, and other fish. These feed, of course, on plants, but we hardly know as yet what plants are of most value to them. They thrive whe herbage abounds, and yet we know that an abundance of herbage may not necessarily mean good crops, for weeds may be much more conspicuous in a pasture than the closely cropped grasses that yield the forage there. Certain species of pond wee have been often used as green food and many notes have been given on the food pre erences of herbivorous plankton crustacea.

A list of foods eaten by all fish would include practically everything that is found in the water, yet when careful food studies are made there are a nu ber of organisms so constantly recurring that they stand out as of prime importar A few aquatic herbivores are found as commonly and as regularly in the stomachs o wild fish as grass would be found in the stomachs of range cattle, and just as stock feeding has made progress with the isolation, study, and increase of grass so fish culture would be advanced by the study and cultivation of the staples of wild fish food.

What of the National Forest Fish Ranges? (Cont.)

Why not start by making systematic observations to determine what the fish are eating throughout the open season? Gain this information by keeping a journal of fish caught--size, kind, male or female, what they were caught with, and the contents of their stomachs. If in doubt, send in these contents for identification by an entomologist. Make it a practice to use scientific names or common names which can not be confused. Organize game and fish protective associations and call upon the members to keep an association journal through the individual members so that the journal will be the property of the association and be available to the Forest Service or the State Game Department. Make for identification collections of water plants where trout or other fish are found, just as you make collections of stock-range plants. From these plants will come a knowledge of the presence of that life necessary to fish culture and its abundance, so that from these factors it will be possible to determine the capacity of stocked or unstocked waters.

Grand Canyon National Park

The creation of the Grand Canyon National Park by the last Congress was thought to end the responsibility of administration of the Canyon by the Forest Service. However, owing to absence of funds the National Park Service has requested the Forest Service to continue its watchfulness until July 1, 1919. The Park people hope that by that time Congress will have provided them with funds to take over the administration of the area.

The Government Employees' Mutual Relief Association

Not long ago a friend of mine, a man of middle age and in fairly good health, died suddenly. He was in one of the departments here in Washington, receiving a salary of two thousand a year. He left a wife and three children, a house partly paid for and a bank account of exactly ten dollars. No life, accident, or sick insurance.

He was no spendthrift. His wife worked hard to keep their expenses under their income; but, with the children to educate, the house payments to keep up, and the thousand and one little items that come up constantly, they had never been able to accumulate much. Poor managers? Perhaps so, but there are plenty of us built the same way.

When he died, his widow was forced to appeal for help to some of his friends, mostly men whose salaries were about on the same level as his. They raised a small purse with which she paid his doctor's bills, funeral expenses, etc. When that was done she was absolutely penniless.

How many men in the Forest Service are in the same condition as to finances and insurance? Too many by far.

Some years ago I stopped one night at a ranger station in District 3. The ranger had been seriously sick for three months and was just getting back to his official duties. His wife confided to me that the only thing that saved them from absolute suffering was his policy in the Employees' Mutual Relief Association. "Several years ago I found one of the application blanks in his desk," she told me "and after reading the statement as to the benefits secured through the Association I coaxed my husband to fill out the application and send it in. After that I made it my business to see that the payments were made regularly, for he was always careless about such things and I knew if it was left to him the policy would lapse at the end of the first half-year and that would be the end of it." "Well," she said, "if it hadn't been for the money John received from the Association I don't know what we would have done, for it gave us money with which to pay doctor's bills, hospital and nurse charges, and medicines, leaving his salary checks untouched. The wife of every Forest officer should see to it that her husband has a policy in this mutual association and see to it that he keeps up the semi-annual payments. Other insurance is all right, but this mutual money is something that comes like manna from heaven and you don't have to die to get it either."

The Government Employees' Mutual Relief Association (Cont.)

"John has never been able to get ahead much since he went into the Service," she continued. "What with a couple of moves we had to make, buying a new horse to take the place of one that died, clothes for the kids and such things we just about broke even. However, I made it my business to find the money to make the two semi-annual payments of six dollars each on that relief association policy and we surely got it all back with big interest."

Life or accident insurance is something about which the average man never thinks until some smooth-talking life insurance agent happens along and pesters him till, to get rid of him, he agrees to take out a policy. Yet that life insurance agent is the best friend our widows and children ever had.

The Mutual Association, however, has no agents to push its claims, so it behooves us all to keep our fellow employees reminded of it. The Federal Government, of course, through the Compensation Act, makes payments in certain well defined cases, but these are wholly for accidents, not sickness, or death ffom sickness, and it is against these that Forest officers need the insurance which the Mutual Association furnishes.

The Employees' Association furnishes the cheapest insurance of which I know. Just how the men handling the Association for us manage to make the payments they do on annual dues of a dollar a month I can't see, but they do it and have done it for the last fifteen years and while the recent epidemic of influenza brought a tremendous strain on the finances of the association, nevertheless they have paid every dollar due members and still have money on hand to meet further demands.

The claims from the influenza began to come in last fall and since November 1, 1918, the sum of $6,524 has been paid out in sick benefits to 146 claimants. There are now about six hundred members out of a total of perhaps five thou sand men in all the interested Services. We should have a larger membership; the more members the safer the insurance.

The Flu has passed, but who can say how soon it is likely to return for another whirl? Why not play safe and get into the association while the getting is good and then if sickness or death does come loping along on his pale "hoss" you will be sure of some ready cash with which to pay the bills.

Don't put this thing off. Don't wait for somebody to urge you to join Sit right down and write a check for seven dollars and send it by first mail to Secretary C. H. Squire, 1349 Parkwood Place, Washington, D. C., and tell him to send you an application for membership. He'll take your check, send you an application to fill out and if you meet the modest requirements of the association as to your present physical condition you become a member. If not, you will get your check back and no harm done.

DO IT NOW. You may be dead this time next month.

WILL C. BARNES.

Alertness Pays

In accordance with the established custom, Property Assistant Mr. Cousins has been in the Washington Office for the purpose of securing bids for supplies and equipment and making awards. On March 6 bids that had been received on telephone and fencing material were opened in the office of the Chief Clerk of the Department. The awards were about to be made when, on March 21, Mr. Cousins read in the newspapers of a cut in steel prices as a result of the action taken on March 20 between the representatives of the steel industries and the Industrial Board of the Department of Commerce. A reduction in the existing schedule of stee for the year 1919 was agreed upon to be made effective at once. It was learned that the reductions contemplated were from 10 to 14 per cent of the steel market prices which were in effect at the time that the bids were made on the telephone and fencing material. On the suggestion of Mr. Cousins, the Chief Clerk agreed not to make the awards, but to call for new bids. As a result of this action, an actual saving of more than $3,600 will be made.

Suggests Planting of Walnut

Planting of walnut trees by the Forest Service is the suggestion made by the Ordnance Department of the War Department. In making this suggestion the Ordnance Department briefly reviewed the great drain on walnut supplies and the absence of any other wood as a suitable substitute.

Planting operations by the Forest Service are limited to the National Forests, where conditions are not suitable for the use of walnut. The Ordnance Department has been informed of this and the suggestion made that a big chance for the planting of walnut exists in many of the cantonments and that the Forest Service is willing to prepare the necessary plans and provide the technical supervision.

Some time ago the Secretary of Agriculture offered the services of the Forest Service in the management of the timberland areas now controlled by the War Department. Previously plans for the management of the 15,000 acres in the Aberdeen Proving Grounds were drawn up. Plans for planting at the coast defences were made and adopted, and for the management of the forests at West Point.

Agriculture Outranks Sawmilling

From Arkansas the following brief note came to Franklin H. Smith as a report on sawmill operations during the past year. The operator apparently heeded well the admonitions to raise food for the soldiers. The note ran as follows:

"Was bessy in the auguculy bensnss the reason I did not oprate."

Forest School in Mexico

The Mexican Government has established a National Forestry School at Coyoacan, Federal District. The course of instruction will cover a period of three years. The school opened on March 1 with a large attendance, students coming from nearly all the states.

Mexico has large forest areas, which up to this time have not been scientifically administered. The Government plans to undertake the reforestation of the barren sections of the country as expeditiously as possible.

College of Forestry Rechristened

The Board of Regents of the University of Washington has voted to change the name of the College of Forestry to College of Forestry and Lumbering, because the work of the college has developed so that it covers the whole field of the lumber industry. The college affords specialization in general forest products, logging engineering, and the business of lumbering, with courses in milling and marketing. These opportunities are of such a practical nature that the demand for graduates has greatly exceeded the supply, especially in logging engineering. The course in lumbering is expected to show equal results, as soon as it becomes well established.

Forestry Affairs in Illinois

A forester for the State of Illinois seems to be a probability, and everything indicates that the legislature in session at present will create the position.

It is expected that the forester will function as a member of the staff of the Natural History Survey of the State. The salary to be made available for the first two years will be but $2,500. But the expectation is that with this modest beginning it will be possible to get a competent man who will stick to the job and make his career as the work develops.

They are looking for a man ambitious and well trained in the principles that underlie practical forestry--or, as they say, a trained ecologist. As a beginning it is planned to make a reconnaissance of that part of the State not covered by the survey of 1908, together with a study of the economic possibilities of forest culture in Illinois, and the formulation of a sound policy of development for public and private management, to be submitted to the Governor and legislature two years hence.

Forestry Affairs in Illinois (Cont.)

In advance of the formal organization, a group of university and college men have devoted their vacations to a survey of this kind, but the magnitude of the work is such that it is neither fair nor practicable to ask for further volunteer cooperation.

The program also includes the extension of forest reservations as State parks. The Chief of the Illinois State Natural History Survey Division, in a recent letter to a Forest Service official, makes the following statement:

"* * * * the Soil Survey of the State now tells us that there are six million acres of land in Illinois the larger part of which has been deforested but which are better adapted to the growth of trees than to any other agricultural use, that most of this land should never have been brought under the plow, that a good deal of it has been abandoned as useless for general agriculture, and that much has been ruined by erosion. A survey of those tracts and a study of their uses is an important part of our undertaking."

Forester Wanted for Queensland

A forest engineer is wanted by the Lands Department of Australia. Applicants must state their experience in logging, engineering, and the general work of extracting timber and forest products by machinery from Crown forests. No indication is given in the announcement as to the probable salary.

Washington Notes

Arthur W. Sampson, director of the Great Basin Experiment Station on the Manti National Forest, Utah, left Washington Monday, the 14th, for his station. En route he will stop at Denver, Colorado, for a short conference with Mr. Jardine, who is now at that point. Dr. Sampson has been with us for several months working up for publication, in bulletin shape, some very interesting material covering certain phases of the work carried on at the Great Basin Station.

Mr. R. L. Hensel, director of the Santa Rita Range Reserve in Arizona, who has been in the city for some weeks preparing for publication a report on the work at that reserve, was suddenly called West last week to Baker, Oregon, where his wife was seriously ill. Mr. Hensel writes that Mrs. Hensel is improving and he will probably leave for his station at Tucson, Arizona, about the 20th of April.

Two plane tables and telescopic alidades will be purchased for the use of grazing reconnaissance parties in Districts 1 and 2. The cost of each set is now approximately $240, which is quite an increase over pre-war prices.

Laboratory Wants Engineers

Openings are announced by the Civil Service Commission for an Engineer and an Assistant Engineer in Forest Products at the Laboratory. Competitors will not be required to report for examination at any place, but will be rated fifty-fifty on education and experience.

The position of Engineer in Forest Products will pay from $1,860 to $3,000 a year, and the duties will be to plan investigative tests dealing with the physical and mechanical properties of wood, processes of preserving wood against decay and other destructive agents, the wood-distillation industry, other industries utilizing wood by chemical means, and the naval stores industry, to make or supervise the making of such tests, compile analyses of test data, prepare reports and, if required, present the results of researches conducted at the Laboratory with which he has become familiar, either to the public or to private individuals. Applicants should be familiar with the technique of testing materials and should have had experience with conducting investigative work.

The salary of the Assistant Engineer will be from $1,200 to $1,800 a year, and the duties will be to assist in the conduct of experimental and research work at the Laboratory.

District 1 - Northern

Victory Loan Call for District 1

The Fifth Liberty Loan Campaign will soon open. The splendid cooperation of Forest officers in previous campaigns aided materially in putting the loans over in those localities where their help was available.

Chairmen of State Committees are supplied with the name and address of each permanent member of the Service in this District, and a personal appeal for assistance will doubtless be made to every regular Forest officer. Such a call should be answered by enthusiastic activity. Forest officers are thrown in contact with a great many people whom it is possible to approach in the ordinary course of affairs and without interference with regular duties, and even if some odd hours are given over to the Loan work, the time will be well spent. DO YOUR BEST.

District 2 - Rocky Mountain

The Purchasing Agents of the Burlington Railroad went to Sheridan, Wyoming, recently, and sawed up some ties to investigate the relation between the amount of visible and invisible defect. They found that ties which showed very little defect on one end opened up approximately 30 per cent unsound material on the inside. However, they afterwards took some treated ties out of a track which had been in place for 11 years. These ties showed that they were infected with rot when put in, but were still giving good service after 11 years. The Burlington is contemplating the purchase of a large quantity of ties from the Black Hills region, and it is thought that the outcome of the above investigations may influence this purchase.

Messrs. E. A. Sherman and J. T. Jardine of the Washington office are Denver visitors this week.

Supervisor A. A. Simpson of the Cochetopa Forest has tendered his resignation to accept a position as road supervisor at a salary of $3,000 per annum.

Supervisor Gordon Parker of the Montezuma Forest has been granted leave without pay for a year, since it is necessary on account of the health of one of his children that he move to a lower altitude.

Much interest is being manifested in the trip up Pikes Peak which is to be made this week by one of the large Government war tanks. The tank was taken to Cascade, Colorado, today and expects to make the climb up the Peak on Tuesday. The trip is being made in the interest of the coming Victory Loan.

Telephone Engineer Kylie has gone to Laramie, Wyoming, to conduct a ten-day course of instruction in telephone work for the benefit of the Rangers on the Hayden, Medicine Bow, and Colorado Forests. This is the fourth of a series of such courses which Mr. Kylie has given. The Rangers are very enthusiastic over the course and seem to be getting a great deal out of it.

It is planned to build observatories on Devils Head Mountain on the Pike Forest and also on Harney Peak in the Black Hills. These points are both frequented a great deal by tourists and are two of the most important points in the District from which to sight fires.

An avalanche of applications for jobs of various descriptions, and for transfers from other Government Bureaus on account of discontinuance or cessation of work, has already been received in this office. From all indications the situation on the Forests is not going to be so hard to handle from the standpoint of hiring help as it was during the past year.

In order that memorial trees may be planted on Arbor Day for the District 2 men who lost their lives in the war, the Fremont Experiment Station is furnishing to all members of this District who desire them, five 7-year-old Douglas fir trees which have been raised at that Station. It is thought that the Douglas fir will be more suitable for planting under average Ranger Station conditions in this District than almost any other tree.

District 3 - Southwestern

R. R. Hill, Grazing Examiner of District 3, who has been making a study of grazing conditions on the alternate sections of the Santa Fe Railroad lands in northern New Mexico and Arizona in cooperation with E. O. Wooton, of the Office of Farm Management, is busy with his part of the joint report, map, etc., to be submitted to Secretary Houston. Mrs. Hill accompanied him to Washington.

Harley J. Helm, of Council Bluffs, Iowa, has been appointed temporary assistant at the Santa Rita Range Reserve. Mr. Helm spent the summer of 1918 at the Santa Rita Reserve in the same capacity.

Chester A. Lee, of Albuquerque, New Mexico, who was honorably discharged from the army early in April on his return from France, has been reinstated in the Service as Grazing Assistant (temporary, pending examination) and assigned to the Santa Rita Range Reserve as Mr. Hensel's assistant

District 4 - Intermountain

Chief Engineer Merrill is in Ogden consulting with the District Forester, the District Engineer, and State road officials of Utah and Idaho. Mr. Merrill has attended a recent meeting of the State Road Commission at Salt Lake City, accompanied by District Engineer Martin.

F. J. Ryder has been transferred from the Office of Operation to the Office of Engineering. Forest Inspector James E. Scott has assumed Mr. Ryder's duties.

P. J. Finch, District Engineer of the Office of Public Roads at San Francisco, and Dr. L. I. Hawes of the Washington Office of Public Roads were recent callers at the Ogden Office.

Earl V. Storm, Grazing Assistant, who has been employed in Grazing studies work in District 1, has been promoted and assigned to duty at the Great Basin Experiment Station in this District, as Dr. Sampson's assistant.

E. H. White, of the State Highway Commission, has been in conference with the District officials relative to securing cooperation on the Neal Road on the Boise Forest. The Commission and citizens are putting up $8,500 on the construction of the road and they desire about $4,000 from the Forest Service.

Supervisor W. W. Blakeslee, of the Toiyabe, has been transferred to Provo, Utah, to succeed A. W. Jensen as Supervisor of the Uinta.

Arbor Day was celebrated by the District Office by the planting of three memorial trees in Lester Park, Ogden, to Captain Homer S. Youngs and Lieut. Hubert C. Williams, who lost their lives in the war, and Ranger Rudolf E. Mellenthin, who was killed while attempting to apprehend a draft evader in San Juan County last summer. Through the courtesy of the City Commission three very desirable sites were made available in the principal park of the city.

Planting work this spring will be confined almost entirely to two Utah Forests, the Uinta and Manti. On the Manti, 100 acres near the head of Huntington Creek will be planted to Engelmann spruce. On the Uinta Forest there will be two areas planted--one at the head of the Strawberry River, where 110 acres will be planted to lodgepole pine, and the other on the South Fork of the Provo River, where 33 acres will be planted to Engelmann spruce and 50 acres to lodgepole. All of the areas lie in high altitudes and present indications are that the snow will last on them until May 15.

Forest Supervisor Carl B. Arentson, of the Wasatch Forest, has resigned to engage in the livestock business near Mackay, Idaho. His record during his long period of employment as a member of the Forest Service has been one of constructive progress and achievement. His resignation has been transmitted to the Forester with the utmost regret. Supervisor Dana Parkinson, formerly in charge of the Salmon Forest and more recently on special detail in the District Office, will assume charge of the Wasatch.

District 5 - California District

"Help Prevent Fire" signs are to be furnished and placed in position along all the roads within the Forests in southern California by the Automobile Club of Southern California, under an arrangement just completed by the Forest Service and the Association.

District 5 - California District (Cont.)

The signs will be placed on the roads in the Sequoia, Santa Barbara, Angeles, and Cleveland Forests, and will conform in makeup to the ordinary markers posted by the Automobile Association. The signs are 18 inches square, blue letters on a white background, enameled and baked on 18-gauge metal bearing in large letters the words, "Help Prevent Fires," above which is the standard Forest Service shield and below the device of the Automobile Club.

It is expected that the signs will be in place in time for the opening of the fire season.

The Association has also issued a call on its 18,000 members to use every possible effort to cooperate with the Forest Service to prevent fires.

Twenty-five Thousand Dollars ($25,000) per year, for the next two years, will be spent in eradicating predatory animals in California, if the cooperative plans of the State Horticultural Commission and the Geological Survey are consummated. Work on several of the National Forests is contemplated.

S. B. Show is now on the Shasta, supervising the annual planting job. Approximately 250 acres will be field planted, this spring. Yellow pine will be the predominating species.

Word has been received that Earl Sullaway, who has been in charge of the Pilgrim Creek Nursery for the past several years, has resigned. This nursery will, from now on, raise stock for use in southern Oregon, as well as for use in California.

Recent Nevada legislation provides for a tax of 35 cents per head on sheep, and $2 per head on cattle, belonging to all nonresident land owners. It is reported that the California Legislature is considering a retaliatory measure providing a tax of 50 cents per head on sheep and $2 on cattle belonging to owners who do not reside within California.

Settlement in the sum of $390.69, the amount actually expended by the Service in fighting a fire started by one of its locomotives on July 13, 1917, has just been agreed tg by the Los Angeles & Salt Lake Railroad. Supervisor Charlton reports that this Company has previously paid $300 damages to two individual landowners on account of this fire.

Fifty-five hundred dollars ($5,500) for a 2-year-old Shorthorn bull was the top price received at the recent Shorthorn sale at the University Farm at Davis. University Farm authorities state that the average prices received were well above those for the previous year, and that a big percentage of the bulls were sold to Forest permittees who attended the sale in large numbers.

A guarantee of eleven cents per pound f.o.b. California shipping point, or an alternative offer consisting of an advance of eleven cents, plus any increase in price which may be obtained at the eastern market, after deducting shipping expenses, was the eastern offer recently received by the California Cattlemen's Association. This offer has convinced Association members that organization pays.

One hundred ten thousand (110,000) acres of State lands located in the National Forests will be administered and protected by the Forest Service, District 5, on a cost (not cost plus) basis, if tentative arrangements with State Surveyor Kingsbury go through. These arrangements provide for fire protection and for the sale of timber, grazing, and other resources. Receipts received from the areas will go to the State, and the State will bear its pro rata share of all expenses.

The West Modoc Stock Association has adopted a resolution requiring all cattle permittees using range within the Modoc Forest, and under the jurisdiction of the West Modoc Stock Association, to keep all bulls off the National Forest until after June 1. Failure to comply with this rule will be deemed sufficient cause for the reduction in numbers, or the revocation of any permit, by the Forest Supervisor, upon recommendations from the Advisory Board of the Association.

From recent reports, it is quite evident that Scab has broken out in different parts of California, and the situation is going to be rather serious unless effective and immediate steps are taken to control it.

At a conference with the State Veterinarian and Dr. Payne, of the Bureau of Animal Industry, it has been decided that no sheep will be admitted to the National Forests unless they have been properly inspected, or the Bureau of Animal Industry furnishes us with a statement that they believe the sheep are free from scab and can be permitted on National Forests.

Grasshopper infestation last season reduced the carrying capacity of ranges on the east side of the Lasson and Plumas Forests from 25 to 40 per cent. The University of California sent Mr. E. R. DeOng to make an examination and submit suggestions for control. While many unforeseen circumstances arose which prevented carrying out the full program, enough was accomplished to justify the conclusion that such an infestation can be controlled by the expenditure of a very small amount of money.

Extracts from the Diary of Ranger Abbey of the Modoc

Saturday, March 22, 1919:--At Pit River R. S. Stayed around station drying out and recuperating from my strenuous day's work for the day previous.

Headquarters or Loafing, 8 hrs. This is paying the penalty for overdoing myself. I left Pit River R. S. at 5.30 A. M. to take advantage of the snow early while it was frozen, but on reaching the timber I found it very soft and not frozen. This made it necessary for me to travel on snowshoes. I repaired four breaks in the line. In doing so had to pull out the snow, where it was covered up and frozen, about 1½ miles of line. With all this work I arrived at Happy Camp at 12.45 P.M., telephoning to try out the line, examining cattle sign where they have been wandering quite recently around the station. My day's work of 8 hours was practically done, but after examining the equipment at Happy Camp R. S., I found inadequate accommodations for me to stay. I had taken from Pit River R. S. sufficient supply of provisions to last me overnight. At this time of the year with 2 or 3 feet of snow on the level and freezing cold, there were no bedclothes and insufficient amount of dry stove wood in or about the station house.

On the return trip back to Pit River R. S. about one-half way between there and Happy Camp R. S., I was taken very sick to the stomach, becoming weak and exhausted, scarcely able to put one foot before the other. To finish up with trip, I was compelled to ford a small creek, a raging torrent at that time of the day. I was tripped up by something midway of the stream and thrown headlong to the bottom. Drenched skin, continued on my way about one-half mile reaching Pit River R. S. at 6.30 P. M.

(Note by C. DuB.:

This is the first time on record that Ranger Abbey has ever admitted that he was physically tired or has ever been known voluntarily to take a rest.)

District 6 - North Pacific

Forest Inspector D. D. Bronson arrived in Portland this week and is going over the 1920 estimates.

Forest Examiner T. J. Starker has resigned from the Service to take up work as traveling secretary for the Western Pine Association. Mr. Starker has been a Forest officer for the past eight years, and for the last two years has been stationed at the District Office, in Products.

One hundred nineteen Forest officers in Oregon have received commissions as deputy game wardens. They will cooperate with the State game warden in enforcing existing game laws.

Forest Examiner C. W. Gould has returned and taken up work in the Office of Products. During the war Mr. Gould was connected with the Forest Products laboratory at Madison.

A timber survey party composed of Messrs. Frankland, Flynn, Conover, Hult, Bright, and Cecil will leave for Bend next week to work up a timber survey project on the Deschutes.

Lightning played conspicuous pranks on the Siskiyou in March and wrought considerable havoc with the telephone lines. The iron type instrument on Mount Emily was struck and badly damaged, and about three hundred feet of the line burned up. On the Chetco Valley farmers' telephone line lightning struck the line at a point where it was hung on a tree and after burning up about two hundred feet of wire traveled along the wire and at every tree ran up the hanger to the tree trunk and thence to the ground, tearing off a strip of bark. This continued for eight trees beyond the point where the line was first struck.

Record of District 6 Scalers

Scale books on large sales, checked in the District Office at Portland, show the following interesting results for the calendar year 1918:

The record covers 411,146 logs, scaled by 40 scalers, Forest rangers, or, in a few instances, Forest assistants and Forest examiners. The number of errors made was 671, or one error for every 612 logs scaled. Robert J. O'Farrell, of the Rainier, heads the list again this year with no arithmetical errors in the scale books submitted by him. He scaled 1,360 logs. George T. McCaskie, of the Siuslaw Forest, with almost as many logs, also has an errorless record and a rating of 100. The largest number of logs scaled by any one man last year was 43,120, the record made by M. J. Brown, of the Wallowa.

From 1914 to 1916 the average rating for the District was 83; in 1917 it was 82; and the last year 84. A more marked improvement in arithmetical accuracy should be developed because of the increasing experience of the scalers on the large timber sales.

District 7 - Eastern District

Well distributed rains in western North Carolina have eased up a rather dangerous fire situation in the Forests in that State. In addition, some strong letters to operators of logging railroads, insisting upon better cooperation on their part, seem to have had good effect, since the recipients of these letters have put on spark arresters and have furnished additional patrolmen for certain parts of the logging road.

On a par with the timber sales for pack-rat nests in the West is a sale recently made on the Boone Forest for sassafras oil. The value of this product to the Government was based directly on the price of the manufactured product. In other words, the Government is receiving a royalty, so to speak, of so much a pound after the oil is distilled.

During the past winter the Forest Service completed the building of a telephone line from Marion to the top of Mt. Mitchell, the highest peak in the East. A lookout is kept on Mt. Mitchell by the State, and the assistance the Forest Service receives from this State warden is of material benefit during the fire season.

Surveyor J. W. Fox came into the Asheville Office a few days ago to finish the office work connected with the survey of the large Ritter boundary on the North Savannah Forest.

The total of the fines and costs assessed against the poachers who were convicted at the last term of the Federal Court in Asheville was $700.

A brief preliminary plan for planting white pine on certain burned areas of the Boone Forest was prepared by Forest Examiner Benedict a few weeks ago. Mr. Carter, of the Washington Office, who visited this section recently inspecting timber sales, believes that planting operations on the Boone would be quite successful, since this area formerly supported a very fine stand of white pine.

WEEKLY BULLETIN

Forest Service - Washington Office

(Not for publication)

April 28, 1919.

The Movement for Private Forestry

Colonel Graves called a meeting of members of the Washington Office on April 21, in order to give them an account of the new movement to bring about the practice of forestry on private lands which he has inaugurated, and which he is calling on the Forest Service to carry forward in cooperation with other agencies. At this meeting he spoke as follows:

I called this meeting because I want to talk to you about some matters that I think are of great importance. I want to tell you of the situation in forestry, where we have arrived, and what we must aim at. We are in a sense just completing an epoch. The fact that a period in the history of forestry is drawing to a close has given an impression to some people that we are not going far enough. The great thing we have accomplished was to set forestry in motion in this country and definitely establish a Federal forest policy, which has to do chiefly with the National Forests.

It took a hard fight to get these things accomplished, and the members of the Forest Service played a very big part in winning it. You had to carry many burdens. An immense amount of credit is due the organization as a whole and the members of the organization individually for what has been achieved. While the individuals may not be picked out and given public recognition for the part they played, we could not have won unless we had had what the Forest Service put in; and by that I mean a great deal.

The big fight was practically over when we succeeded in replacing opposition to our enterprise with tacit acceptance at first, and afterwards active support. The National Forests are now established as a permanent enterprise. That constitutes the first forward step. I feel confident that fifty years from now people are going to find what we have got set aside not only substantially intact but very much increased.

What has been done is a large achievement. Many people have the idea that because the National Forest enterprise is a big one, because it is far-reaching, and because it involves large appropriations, and so on, the forest problem of the country is practically solved. As a matter of fact it is only beginning to be solved, and we have accomplished only a part of what we have got to do. We have about reached the point now where we can begin the next step.

A tremendous undertaking is ahead of us, a field of work in which we have hardly done anything. I refer to forestry on private lands. Certainly the public forests we have now are not going to meet the requirements of the country. They are too localized, and there are not enough of them. I do not need to go into details to show that public forests as they are today would not meet the situation. We could not secure the establishment of enough Federal and State forests to meet the country's needs. No matter how big a program of public forests we have, we still must recognize that a large portion of the benefits which have got to come from forestry in this country must come from forests now privately owned.

The country has not been thinking much about this subject lately, but it is beginning to ask a lot of questions. In the first place, why do we have to pay so much for lumber? The price of lumber has gone up tremendously in the past few years not only because of the increased cost of labor and material but also because of the rapid exhaustion of private forests, especially in the East. In other words, the country is beginning now actually to feel the effects of forest destruction. Industries are closing down for lack of forest supplies. It is a serious matter to the local communities when that happens. The economic consequences of forest destruction are being felt very severely in hundreds of places, and many questions are being asked as to why something is not being done about it.

We propose to do something. We have started vigorously to bring about a reasonable practice of forestry on all private lands which should remain in forests. There is no reason why that can not be done. There is no reason why we can not bring it about. We are starting the enterprise not only with a determination to do it but with a full expectation that we are going to do it.

Now that is a pretty big undertaking. It is such a big undertaking that when you first discuss it with people they are apt to feel that it is too big. It is going to require the best thought not only of ourselves here but of the whole profession and of the public. We are calling upon the profession and upon all who are interested in one way or another to take this thing up.

We have two classes of land to consider. One is the farm woodland and the other is the timberland. The farm woodland is a part of the farm, and the farm is held, used, and developed in connection with permanent homes and as a permanent undertaking. Improved methods of handling farm woodlands must be brought about in the same way as improved methods of growing other agricultural crops. We have developed in this country Federal aid or extension work on our farms, and we should bring this farm woodland problem into coordination with other agricultural undertakings. The county agents engaged in extension work should help bring better practice of farm forestry. It is a matter of education. The Forest Service is not doing today what I want it to do in this educational work. Within the near future, in spite of our meager funds, we hope to get such results that Congress will give us more funds and enable us to do more. But our immediate task is to reach 100 per cent effectiveness with what we have. There is going to be a great deal of work to be done by our organization, outside of the men who are specifically assigned to the project.

With the second class of land--the timberland--we have a more difficult situation because most timberlands are purchased and held speculatively. Of course there are big estates like some of the hunting properties in the Adirondacks that can be worked out educationally with their owners, but the bulk of the timberlands of the country are held speculatively. The owners have bought them to clean off the timber. They are not at all interested in what happens to the land afterwards. They are not interested in getting trees to follow cutting, and they are not planning to protect the lands after the present stand of timber is gone.

The conditions throughout the country as a whole are pretty bad. The forests are still being burned, still being badly cut. We have got to educate. We have tried cooperation, we have tried moral suasion, and some people have tried condemnation--I mean by word of mouth--and still we are not getting anywhere. The reason is primarily speculation. There are forces which prevent us. The timberland owners have bought for a speculative profit, not for a permanent investment. We are not going to get anywhere until we reach clear back to the forests and get a different kind of impulse in the owners themselves.

The same thing has been found true in other countries. In no country has success come merely by moral suasion, by education. No foreign country I know of is doing it on that basis, and I think we have got to recognize that we can not do it in this country. We have got to find some way to make right forestry practice a definite requirement on those lands which may be classified as permanent forest lands.

Now this is drastic. It has been proposed in some of the states. I am going further. I am saying, Why is is not feasible for us to make laws, both Federal and State, which combined will bring it about that everybody will have to practice forestry? Many reasons why not will be given. A lot of questions will be raised, and these will differ in different parts of the country. There are certain obstacles which we recognize, like unwise systems of taxation, local economic conditions, peculiar distribution of land ownership, special conditions in cut-over lands, that stand in the way of practical forestry. Let us see if we can not remove these obstacles, make forestry feasible, and then make it a requirement.

It happens that in nearly every part of the country the timberland owners are having trouble of some sort. We can see now that so extensive private ownership of timberland is not wise. The Government should have retained the public timberlands; but that was not done, and the results are being reaped in the troubles that private owners are having almost everywhere. The industry can not carry the timber that it holds, and we find it appealing to the public for help.

You find a group of lumbermen appealing through the United States Chamber of Commerce for permission to form combinations in restraint of trade. The timberland owners are appealing to the States regarding taxation; appealing to the Government for better international arrangements to get timber from Canada; and so on. The owners are asking for help.

Now some of these things that the industry is asking are very reasonable things to ask, but the public has the right to say, if we help this land situation we must have guarantees for the right handling of the lands so that they may be kept productive and continue to be a source of prosperity to the locality. It happens, therefore, to be a very favorable time to take up for consideration these larger questions of the continued productiveness of the forests, on the one side, and the working out of the practical questions that the industries are up against, on the other, handling the two together.

In the last few weeks I have been bringing this matter before the public in various places, to different groups of people, State foresters, teachers in forest schools, timberland owners, and so on, and I have failed to find a single person yet who felt that this was not a fair proposition. They can see a lot of difficulties, but they have thought the proposition feasible. Thus we have launched an important new enterprise. It is one in which the Forest Service is going to take a big part. We are getting the State foresters and other forest interests in the different regions interested. In cooperation and close touch with us men are working out local problems and taking local leadership. When we get our program crystallized we are going to try to get the whole country behind us.

It is going to place a pretty big burden on you. I wanted to tell you that we have this big task ahead, and I am going to ask you to help on it, individually and collectively, and to take an individual part and interest in it. It is going to mean for every one in the Service more to do. I feel myself that the undertaking is of so very great importance that you ought to know about it from me.

We are preparing a new program in forestry. It is one that I can tell from the responses I am getting already is going to take hold. It will include as an essential part a greater public forest program, more extensive acquisition of forests by the Federal Government, by the States, and by municipalities. A great many other things will have to go into the full program, but the great purpose is to get the forests of this country under a rational system of management.

Papers will be written in different parts of the Service, and in different parts of the country, that will help you to keep track of how this undertaking is going. Discussions will undoubtedly appear in all the forest journals, lumber trade journals, and so on. There will be a great deal of discussion and some controversy over certain parts of the undertaking, which I think it will be interesting for you to follow. It may be well for us from time to time to have more meetings of this kind to check up and see how things are going.

Any movement of this kind will react upon the Forest Service; it will react upon the whole personnel, react on the National Forests. The men on the National Forests are going to have to play a part because from now on more and more the National Forests are going to be demonstration grounds for the country. This is probably truer in the East, where we have more intensive markets and more intensive conditions, than in the West. I want to repeat that I feel we now have both a big responsibility and a big opportunity, which I want to see the Forest Service take hold of in a big way, just as we have in the past. We will go forward on this extension of our enterprise to its completion, and if necessary we will fight to carry it through. I want you all to feel that you are a part of it; and I want your help on it.

Is the Florida Forest Unique?

The claim is often made that conditions on a particular Forest differ from those elsewhere and that therefore different action should be taken. "Local conditions" and the alleged inability of superiors to recognize them have been a fruitful source of discussion. It has been suggested that the readers of the bulletin would be interested in discussions of different Forests, particularly with respect to unique features. The following is therefore submitted with regard to the Florida National Forest in support of its claim to distinctiveness:

1. The Florida Forest consists of two divisions, strikingly different from each other and from any other National Forest areas.

2. The highest point on the Western Division of the Forest is only 300 feet above sea level. The highest point on the Ocala Division is only 200 feet above sea level. These maximum altitudes are lower than those on any other National Forest. The Forest also claims the lowest average elevation.

3. The forest types on the Florida Forest are not found on any other Forest. (See Classification of Forest Types in the Instructions for Making Timber Surveys.)

a. The chief species and practically the only commercial species on the Western Division is longleaf pine, which is not found on any other Forest and occurs in only limited quantities on the Ocala Division of the Florida. It is practically fire-proof after reaching the age of five years.

b. The chief species on the Ocala Division is sand pine (Pinus clausa), which is not found on any other National Forest and is present in only very limited quantities on the Western Division of the Florida. It is not fire-resistant at any age.

c. The third species in importance on the Forest is slash pine (Pinus carribea), which is not found on any other National Forest.

d. The titi type is not found on any other Forest. It contains merchantable pines only occasionally, and some bald cypress.

4. The timber on the Forest is at present much more valuable for a by-product than for lumber or other wood material. This by-product is turpentine, which is not produced in commercial quantities on any other National Forest.

5. The Florida has a working plan for its timber resources and has been following it for six years.

6. It is more heavily alienated than any other National Forest except the Luquillo and the Tahoe. This condition is being remedied, however, for it has an "equal value" exchange law and has definite "permanent retention" boundaries which have been approved.

7. It claims to have the oldest public land surveys of any Forest, dating from 1826. It therefore claims to have the greatest difficulty in finding true section corners. On the entire Western Division only two verified corners are known to be in existence.

8. In spite of the fact that public land surveys were supposed to have been completed years ago, it has, on the Ocala Division, an area of unsurveyed and as yet undesignated lands, consisting of a strip between two supposedly contiguous surveyed townships.

9. It claims the longest bridge built with improvement or 10% money. The Shoal River bridge is 2,190 feet long, including trestle approaches, and took all the timber on a section of land for its construction.

10. Its streams never flood and never go dry.

11. Its game recourses include alligators and crocodiles.

12. Its Western Division borders on salt water and its products are transported to market chiefly by water. (Editor's note: The writer evidently forgot the Alaskan Forests).

13. It is supposed to have pirate gold buried in its soil.

For the benefit of other Forest officers who may wish to present the claims of other Forests to distinctiveness, it may be noted that the following claims have been disallowed:

1. "This Forest would be in wonderful shape if it had not been for the land grants to the railroads." Numerous Forests can echo this statement.

2. "This used to be the toughest section of the States, but of late years, etc., etc.

3. "It costs more per mile to run a flivver through these roads than anywhere else in the country." The claim is common, but notice the use of the word "through." It indicates sand.

4. "The Forest force has tried reforestation with exotics but has recovered its sanity." This has been disallowed with some hesitation.

5. "It has the most sandy soil of any National Forest." The Michigan and Nebraska will challenge this statement.

6. It is the best Forest in the country, with greater possibilities for future development than any other." The editor expects 140 similar claims to be filed.

Commanding Officer of the Tenth Engineers Honored

Colonel James A. Woodruff, commanding officer of the 10th Engineers (Forestry) who was later in charge of all the Forestry troops in France, has been awarded the Distinguished Service Medal for "exceptionally meritorious and distinguished services."

Are you a Technically Educated Forester?

Pullman College, Washington, is in need of a professor of forestry, whose qualifications must be those of a technically educated forester with a thorough practical knowledge of forestry combined with ability as a teacher. The initial salary ranges from $1,600 to $2,000, depending on the qualifications of the appointee. Anyone with the necessary qualifications who desires to be considered as an applicant for the position should notify the District Forester, Forest Service, Portland, Oregon.

National Forest Receipts

The statement of receipts from National Forest business during the nine months of the current fiscal year just ended shows a net total of $1,964,947.97, which is a decrease of approximately $65,000 from the net total for the same period last year. The total receipts for the month of March, 1919, show a substantial increase over those of the same month in 1918, amounting to $688,984.82 as against $552,795.70 for March of the previous year. Of the various items, grazing of cattle and horses and special use show marked increases over last year's receipts for the same period, but timber sales, grazing of sheep and goats and water power, register a decline. District 6 heads the list with a total of $260,214.80 followed by District 1 with a total of $227,286.06, and Districts 2, 3, 5, 7, and 4, in the order named. Districts 6 and 7 are the two Districts showing in increase in Forest business for the period over the corresponding section of the last fiscal year, the other five Districts all registering decreases.

The Service Takes Its Pen in Hand

This spring the members of the Service have been turning out articles for the trade and technical journals at an unprecedented rate and have poured a flood of them into the Editor's office. The editorial force is handling them promptly, however, the endeavor being to begin editing an article the same day it is submitted. So far the average is a little better than one a day. Following is a list of those which passed through the Editor's office during the first three weeks of April:

Title	Author	Place of Publication
Water Resistant Glues	F. L. Brown	Chemical and Metallurgical Engineering
The Phenomena of Drying Wood	H. D. Tiemann	Journal of Franklin Institute and Scientific American Supplement
Sheep Grazing in Utah	J. W. Humphrey	American Sheep Breeder
Ticks and Timber	Austin Cary	American Forestry
Effects of Changed Conditions upon Forestry	W. W. Ashe	Journal of Forestry
A Volume Table for Railroad Ties	James W. Girard U. S. Swartz	Journal of Forestry
Forestry as a Vocation	H. H. Chapman	American Forestry
Airplane Propeller Wastage Reduced	Rolf Thelen	Aerial Age Weekly Aviation & Aeronautical Engineering
The Distribution of Walnut	Wm. H. Lamb	A lumber trade journal
The Proximate Analysis of Commercial Casein	F. L. Brown	Technical journals

The Service Takes Its Pen in Hand (Continued)

Title	Author	Place of Publication
Temperature of Laminations and Time under Pressure in Gluing Laminated Construction	A. C. Knauss	Aviation and furniture magazines
Technical Notes on the Design of Airplane Wing Ribs of Chord Length from 55 to 70 inches	Armin Elmendorf	Aeronautical journals.
Program of Conservation for the South	J. G. Peters	Journal of Forestry
Extension Work in Forestry	A. F. Hawes	American Forestry
The Development of Methods for Testing Glues in Water Resistant Plywood	C. H. Teesdale R. A. Colgan	Furniture magazines
The Problem of Sheep Grazing as Affecting Reproduction of Western Yellow Pine in District 3	H. H. Chapman	Journal of Forestry
The Strategic Importance of Forests in the War	Tr. by S.T.Dana J. Demorlaine	American Forestry
How Airplane Propellers are Made	A. L. Heim	Technical journals
Glues Used in the Manufacture of Wooden Airplane Parts	Not given	Bureau of Aircraft Production or Nat'l Advisory Com. for Aeronautics
The Difficulties Encountered in Balancing Propellers Made of Quarter-Sawn Material	Eugene F. Horn	Technical journals
The Collection and Some Uses of the Oleoresin of Douglas Fir (Oregon) Fir Balsam; Douglas Fir Tupentine	S. A. Mahood	Technical journals
A Discussion of the Effect of Kiln Drying on the Strength of Douglas Fir	C. A. Plaskett	Technical journals
Suggestions for Instructions in Range Management	Arthur W. Sampson	Journal of Forestry
Testing the Shearing Strength of Glue	George M. Hunt	Technical journals
A Commercial & Silvical Tree Study of Sitka Spruce	T. T. Munger	Submitted
The Cascara Bark Industry on the Siuslaw National Forest	T. T. Munger	Submitted

National Forest Area Reduced

The President has signed a proclamation eliminating 104,713 acres from the Inyo National Forest in California and Nevada. The boundary changes were recommended by the Secretary of Agriculture in consequence of the land classification of this forest made by the Forest Service.

A number of scattered areas are involved. A solid block of about 15,000 acres in Nevada includes the Magruder and Palmetto Mountains. The land has little value and is similar to thousands of acres of wooded mountains which surround it on all sides. The pinon and juniper timber was not found of sufficient importance to warrant holding the lands within the forest.

The Adobe Meadows area of more than 23,000 acres was eliminated at the extreme north end of the forest in California. This land is located in Adobe Valley and on the mountain slopes to the west and south, with an elevation varying from 6,500 to 9,400 feet. It is mostly either brush or grass land and has no living streams of water.

National Forest Area Reduced (Cont.)

Over 4,600 acres are eliminated in various tracts along the west side of Owen's Valley in California. About one-third of the land is sufficiently level to cultivate. The new forest boundary is placed as nearly as possible along the foot of the steep range.

Cleveland Forest on the Move

That is, officially speaking! Probably most readers of the Bulletin already know that the Supervisor's office will move from Escondido to San Diego, into the former offices in the Federal Building, some time in May. The move will be made by auto truck. Bids for this service will be issued in the near future. In this connection, Supervisor Tillotson and Clerk Becks spent one day this month together in San Diego for the purpose of interviewing the custodian of the Federal Building.

Washington Notes

Assistant Forester E. E. Carter has returned from an inspection trip through the Southern Appalachians.

Assistant Forester Will C. Barnes is leaving Washington this week for an extended inspection trip. He will put in about three weeks inspecting the lambing on the Montezuma and Rio Grande Forests, and will then go onto the Bighorn and to Districts 3, 4, and 6. We expect him back in Washington in October.

Forest Inspector Clinton G. Smith will leave Washington on the first of May for an inspection trip which will take him into Districts 1, 4, and 6. Mr. Smith will be absent from this office for about two months.

Property Assistant A. K. Cousins, after spending several weeks in Washington getting things lined up for next year's supplies, has returned to Ogden.

W. R. Mattoon journeyed out to Camp Meade last week and told the boys just returning from overseas all about farm forestry. Mr. Mattoon showed a couple of Forest Service reels and used a bunch of slides to illustrate his talk.

Paul D. Kelleter dropped in long enough on us in Washington to tell about his ten-days' talking trip to Newport News and vicinity. Mr. Kelleter has been giving illustrated talks on the work of the Forest ranger on the National Forests to soldiers at the various Y Huts. He is now at Camp Lee holding a three-day forum on all phases of forestry with a few Forest Service movies and an illustrated talk thrown in.

Captain E. S. Bryant has returned from service with the 10th Engineers in France. Captain Bryant has not indicated to us what his plans are for the immediate future, except that he is going to enjoy a vacation before getting down to cases.

District 1 - Northern District

A sale of 2,150 M feet B. M. of white pine has just been consummated on the Kaniksu Forest. The first appraised price was $7.75, but after the appraisal was checked and allowance made for silvicultural measures the price was fixed at $7. With white pine stumpage at this price now, it is not difficult to forecast a price of $15 to $20 fifty years hence.

The rangers on the Lolo Forest have just completed a study of the winter game conditions on the Forest, which includes an approximate estimate of the deer and elk wintering on the Forest and a map of their winter ranges. The total estimate for deer is 2,150 head. It was found difficult to make anything like an exact estimate and this figure may be more than 50 per cent in error. It is certainly conservative.

Some interesting figures were obtained on the elk which range on the Forest. In 1913 two plants of about 40 head each were made on the Forest with elk shipped from the Yellowstone Park. Both bands are doing excellently and have increased in number. The 38 elk released near Superior are estimated to have increased to 60 head, of which 40 head winter on what is known as Bald Hill, about six miles west of Superior, and 20 head just north of Keystone. The 42 elk released on Petty Creek, south of Lothrop, have increased even more and are now estimated at 90 head. It is quite possible that this herd may have been augmented by native elk from Idaho joining them.

In the course of the study 13 mountain lions were located by tracks, although none were actually seen. Three of these range on Nine Miles Creek, two on Ward's Creek near Haugan, five in the Superior district, one in the country north of Quartz, one on Deep Creek, and one on Petty Creek. As it is estimated that each mountain lion kills an average of one to two deer a week, the lions must levy a considerably heavier toll on the deer than hunters do.

The Chicago, Milwaukee & St. Paul will begin operating its trains electrically through the Cascade Mountains in Washington about July 1. This completes a stretch of 218 miles of electrification between Othello and Eastern Washington and Seattle and Tacoma. On account of its importance, the work has been continued during the war. With the 440-mile stretch previously completed between Harlowtown, Montana, and Avery, Idaho, the company will operate 660 miles of electric road, over all of which the danger from forest fires has thus been almost completely eliminated.

District 2 - Rocky Mountain District

First Lieutenant Fred E. Mendenhall, D. S. C., of the 7th Engineers, has returned to Denver from overseas. Lieutenant Mendenhall will receive his discharge in a few days at Fort Logan, Colo., and will be appointed District Engineer to fill the vacancy caused by the death of R. E. Pratt.

The proposed action by the Colorado Legislature to open the season on beaver suggested the preliminary survey which was recently made by the Forest Service to determine the number of beaver and colonies on the various National Forests of the State. Summary figures show that there are approximately 5,000 beaver colonies and 30,000 beaver in the seventeen National Forests of Colorado. The following Forests lead in the number of beaver reported:

Battlement	5,000
Gunnison	3,480
Durango	2,700
Routt	2,600
Colorado	2,310
Sopris	1,135
Pike	1,000

Damage done by these animals to irrigation and water systems is estimated at $1,000 each year within the National Forests and $15,000 outside the Forests. On the other hand, storage of water and regulation of streamflow, together with the betterment of stream conditions looking to fish propagation, are among the benefits derived from having these animals within the Forests, not to mention the interest which this form of wild life creates among visitors to the West.

War Tank Essays Pikes Peak to Boost Victory Loan

Gay with camouflage, the Stars and Stripes floating proudly from its battle-scarred turret, with the password "Pikes Peak or Bust" painted on its ugly snout, "Little Zeb," the war tank that essayed to conquer His Majesty, Pikes Peak, in the interests of the Victory Loan campaign, "busted" on the tenth mile of valiant effort. Bucking its way through snowbanks 10 foot deep, this little tankster fought as game a fight to the finish against the overwhelming odds of nature as did its namesake, Lieutenant Zebulon Pike, over a century ago, and like him failed to reach the coveted goal.

The climb was made on April 16 and 17 over the Pikes Peak Auto Highway in the Pike National Forest near Colorado Springs. A truckload of supplies, suggestive of an Arctic expedition rather than a mountain trip in April, followed the tank as far as snow conditions would permit. A special auto bus load of newspaper men, photographers, and moving-picture operators, equipped with sweaters, arctics, trench coats, hemlets, and sun glasses, trailed the terror of the battle to the "death." Four motion-picture companies covered the trip. W. I. Hutchinson, of the District Office, represented the Forest Service.

The tank broke down after climbing two of the hardest miles of the highway, within sight of Glen Cove--the half-way point on the road to the summit. Ice and snow clogged the caterpillar traction and caused one of the track plates to break, making a complete renewal of the part necessary before the tank could be moved. On account of the lack of time and the necessity of keeping up the schedule of visits to other Colorado towns, the trip to the summit was abandoned and the tank, after being repaired, returned to Colorado Springs.

The hike overland to Glen Cove, from the point from which "Little Zeb" was forced to retreat, will never be forgotten by any of the baker's dozen (significant number) that made it. They struggled through snowdrifts, waist deep, loaded down with movie equipment and blankets, until the Inn at the Cove was finally reached, by which time several of the members of the party were in an exhausted condition. To the Forest officer, who had one of the two pair of snowshoes on the job, fell the "honor" of packing the grub for nine men from the tank to Glen Cove, also the cooking for the party, most of whom were tenderfeet.

District 3 - Southwestern District

Ranger Raymond E. Nafziger, of the Manzano Forest, resigned on April 19.

Raymond E. Grefe, 1st Sergeant in the 20th Engineers, is being restored to the rolls with assignment to the Grand Canyon National Monument.

Forest Examiner Quincy Randles has furnished the District Office collection with an excellent series of photographs of scenes along the proposed Clifton-Springerville Highway.

The resignation of Forest Ranger Floyd R. Wigely, of the Apache, took effect on April 20. Mr. Wigely is leaving the Forest Service to become associated with former Supervisor Charles H. Jennings in the automobile business in Holbrook, Arizona.

Forest Examiner G. A. Pearson gave an interesting and instructive talk before the local chapter of the Society of American Foresters, on April 5, his subject being "Factors Controlling the Distribution of Forest Trees." Mr. Pearson has just returned to the District from a winter spent in Washington compiling data on his various experiments.

The District Office of Engineering will establish at each ranger station a true meridian for the use of the ranger in adjusting his compass. In addition, at each fire lookout tower a true bearing from the tower to some prominent, well defined object will be determined for use in orienting fire protractors. The towers will also be connected by traverse to a public land corner. All of this work will be handled by the entry survey parties in connection with their regular work.

Forest Supervisor T. Earl Wylder, who has been in charge of the Grand Canyon unit since October, 1916, resigned from the Forest Service on April 19, to go into private business in Missouri. Mr. Wylder has been in the Service since 1912, most of the time in this District, as ranger on the Apache and Prescott Forests prior to going to the Canyon, and he has shown decided ability in handling difficult administrative units.

The cooperative agreement for the construction of the Oak Creek cut-off road, 5 miles in length, has been received in the District Office properly executed by the Coconino County Board of Supervisors. The estimated cost of the project is $20,000, of which Coconino County will bear 50 per cent. The road will be constructed under the direct supervision of the Office of Public Roads and will open up the recreational areas at the head of Oak Creek.

An experimental sale of mine timber was made on the Apache and Datil National Forests a few years ago to John Christy, for the purpose of experimenting on the drivability of the Blue River. The material from this sale was to be driven down the Blue in the log and sold in the Clifton-Morenci mining districts for mine stulls. The last two seasons have been unfavorable for driving. This year has proved ideal for this purpose and Mr. Christy has recently started his drive of over 30,000 logs. The experiment will prove of vast importance if successful.

Reports from 47 mills in New Mexico showed a cut of 85,215,000 feet of lumber, timbers, and ties, and from 19 mills in Arizona, a cut of 82,511,000 feet, during the calendar year 1918. Reports have not been received from all the mills in these two States, but it is estimated that the 25 mills in Arizona produced 83,661,000 feet and the 58 mills in New Mexico 88,915,000 feet. The average sale price reported by the mills in New Mexico was $22.23 and in Arizona $24.32.

The supplemental cooperative agreement for the construction of the Hondo-Mescalero road project has been received in the District Office, having been executed by the State Highway Engineer. The original agreement entered into in 1918 provided that the Federal Government should construct a section of this project to cost approximately 50 per cent of the total and the State the remainder. In the supplemental agreement, the maximum liability of the State is fixed at $45,500 and that of the Federal Government at $61,239. It is now the desire of the State authorities that the entire work be done by the Office of Public Roads.

District 4 - Intermountain District

Bids were opened in the Office of Public Roads on April 15 for the Straight Canyon Section of the Ephraim-Orangeville Road and the Daniels Canyon Section of the Heber-Fruitland Road. The Heber-Fruitland bids were rejected, but the lowest bid on the Ephraim-Orangeville was accepted.

The State Road Commission of Utah, at the meeting held on April 16, in Salt Lake, approved the plans for construction this year as follows:

The Straight Canyon Section and a five-mile section of the Ephraim-Orangeville Road; the complete construction of the Logan-Garden City, Modena-St. George, Camas-Stockmore, Sevier-Cove Fort, La Sal-Paradox, Daniels Canyon and Heber Sections of the Heber-Fruitland Road, and the Canyons portion of the Cedar-Long Valley Road; and the surveys of the Salina-Emory and Panguitch-Tropic Roads. Decisive action with reference to the Woodruff-Huntsville Road was not taken because good data on the road and a good estimate of cost were not available.

District Engineer J. P. Martin attended the meeting of the State Highway Department of Wyoming, on April 8. The Department approved entering into a cooperative agreement with the Forest Service for the survey and construction of the Hoback Canyon Road on the basis of an expenditure of $70,000. The agreement will be drawn up at once and presented to the Department for execution.

Assistant District Forester C. B. Morse and Inspector of Grazing Ernest Winkler have returned from Pinedale, Wyoming, where they attended meetings of the following grazing associations: Upper Green River at Pinedale, Beaver & Horse Creek at Daniel, Willow Creek at Cora, Beaver & Twin Creek at Daniel, and the North Fork East Fork at Boulder, Wyoming. The meetings were very successful and the associations were found well disposed toward the Service and greatly interested in improved methods of handling. All of the associations adopted salting plans which have been formulated by the Service and seemed anxious not only to put the new methods into effect but to protect the ranges to the fullest extent.

District 5 - California District

A study of fire damage on nearly 13,000 acres of timberland located on the Shasta and Eldorado National Forests shows that from one source alone, namely, the burning down of fire-scarred trees, an average loss was incurred of 1,183 board feet per acre, worth $1.76. So far as was determined, this loss was entirely independent of the severity of the fire, which occurred at all seasons of the year with varying amounts of litter, and might be high where heat killing was low and vice versa. It was only necessary that the fire get into the already scarred trees, the presence of scars depending on previous fire history. Once started such trees would go whether the main fire was heavy or light. The average diameter of trees burned varied from 36 to 52 inches in the various fires and the loss occurred in the timber containing the greatest per cent of high grades.

Last month Clerk Becks read a paper on Forest Service work on the Cleveland Forest before a meeting of Boy Scouts and their friends and parents at the Women's Club House in Escondido.

District 5 - California District (Continued)

W. E. Ryan, in charge of the Laguna Area of the Descanso District, Cleveland Forest, recently set a trap near the carcass of a dead horse in the effort to catch some of the nocturnal-yowling coyotes, but succeeded instead in capturing one of the largest eagles ever seen in that region. After quite a battle, he managed to release the huge bird, which forthwith drove its captor to cover behind a big pine, from which place the flight to freedom was safely watched, both combatants being conscious of victory, their separate objectives being accomplished.

District 6 - North Pacific District

On the recommendation of the District Forester at Portland, Oregon, Reg. T-1 "E" of the Manual has been amended by extending the requirement of camp fire permits to two designated tracts on the Columbia National Forest, Washington, which are known as the Siouxon and the Yacolt Burns. These tracts contain approximately six townships and were originally burned over in 1902. They are now covered with a good stand of reproduction which demands special protection until it reaches a size and density sufficient to lessen the fire risk. The fire risk on these tracts has increased rapidly in the past five years because the decay has progressed sufficiently to cause great numbers of dead snags to fall and form decayed heaps of logs and finer debris. While these two burns are not frequented by travelers to any great extent, the region is visited by fishermen, huckleberry pickers, and others, so there is considerable fire danger.

Logging Engineer L. A. Nelson has resigned from the Forest Service to accept a position in charge of the Portland Office of the West Coast Lumbermen's Association, at a considerably advanced salary and with much better opportunities for advancement.

A new industry has started at Skykomish, on the Snoqualmie Forest, consisting of cutting forked vine maple poles to be used as apple tree props at Wenatchee. They are worth 4 cents each at that point. A 20-mile wagon haul is necessary to secure these props east of the mountains, while the freight charges from Skykomish are not much.

On March 27, Supervisor Treen, of the Snoqualmie, attended a get-together meeting of County Commissioners of King, Snohomish, and Chelan counties and others interested in the completion of the Cascade-Scenic Highway. The meeting was quite successful and a tentative agreement was reached whereby the various County Commissioners agreed to open up their sections of the road contingent upon the advancement or promise of certain aid from the Forest Service.

District 7 - Eastern District

Capt. Eldredge, of the 20th Engineers, is spending several weeks on the Forest which he left as Forest Supervisor when he joined the Army early in the war. He has now received his appointment as Asst. District Forester, and will soon go with his family to take up his work in Washington. Capt. Eldredge's presence on the Forest at this time is being taken full advantage of by Supervisor L. L. Bishop, it being his first opportunity to learn direct all the plans and hopes the Captain had had for the Florida when he was its Supervisor. Capt. Eldredge spent seventeen months in the Landes, France, and there came most intimately in touch with the French turpentining industry. His observations are proving of the greatest benefit in planning for the future of the Florida Forest. It is expected that he will be in Florida until about the end of May.

After several years working and waiting, the ambitions of the Forest Officers of the Florida National Forest are being realized, in so far as the main unit of the Forest road system is concerned. A highway is now under construction extending from Crestview on the L.& N. R. R., through the Forest by way of Niceville, to Camp Walton on Santa Rosa Sound. Two of the four Ranger headquarters of the Forest are directly served by the road--one at Niceville and one at Camp Pinchot, the former summer headquarters of the Forest on Garniers Bayou. The project will cost approximately $90,000, $47,000 of which is being provided by Okaloosa County, and $43,000 from Section 8 Federal Aid Funds. The road will be 27 miles long and 22 feet wide, 14 feet of which is to be surfaced with the natural sand-clay mixture which is found at several points along the route. This surfacing, with proper maintenance, has been found to give very satisfactory results, especially where the traffic is not by extremely heavy vehicles. An important link in this route was completed last year when the bridge and trestle road-way across Shoal River was finished at a cost of approximately $10,000. The Federal cooperation in this improvement was $2,700 of the 10% fund and 208,000 B. F. of pine stumpage. The structure is 2,604 ft. long, built entirely of heart longleaf pine, excepting a 100-ft. steel span and the cypress piling.

One of the points at which construction is being taken up is in the pasture back of Ranger E. R. McKee's Station at Camp Pinchot. This is appropriate, as Ranger McKee, who worked effectively during the foundation stage of the project, will thus be one of the first to benefit by it. Approximately 10 months will be required to complete the road.

Tie Stumpage Sale

The approval of the District Forester has just been received for the sale of 40,000 railway ties to be cut in the East Bay Ranger District. This stumpage is to be obtained entirely from dead, down, and badly decadent longleaf pine timber. A sale was advertised at a minimum rate of 6¢ for 6 x 8 ties, and 10¢ for 7 x 9 ties. The contract was let on a bid of 8¢ and 12¢ respectively. The removal of this material at these figures represents a neat salvage. The presence of so large an amount of dead timber is explained by the fact that throughout the Forest the present stand is largely mature and overmature, and further that this particular locality has been visited by two hurricanes during the past two years. Ranger J. M. Jordan is in charge of the sale on the ground, and reports the work progressing very satisfactorily.

Acquisition

Harold G. Wood, National Forest Examiner, in the Office of Surveys, Branch of Acquisition, resigned from the Forest Service on April 10, to assume the duties of secretary of the Eastern Forest Products Association, with headquarters at Bangor, Maine. Mr. Wood is a graduate of the University of Maine Forest School. On his appointment as Field Assistant in the Service in 1912, he was detailed to work on the appraisal of lands in the Southern Appalachians. A few months later he qualified as Examiner of Surveys and for the next five years was engaged on the survey of lands acquired under the Weeks Law. In 1917 he was made National Forest Examiner and detailed to the Washington Office. During the year 1918 he was specially assigned to the War Industries Board to conduct special investigations of the tanning extract industry. Shortly after the Armistice was signed and the War Industries Board was dissolved Mr. Wood devoted two months in Central America to the study of the tanning resources in that region, in the interest of a large tanning importing company of New York.

WEEKLY BULLETIN

Forest Service - Washington Office

(Not for publication)

May 5, 1919.

Colonel Greeley Writes About Forestry Operations in France

(The following excerpt is from a letter received by Colonel Graves from Lieutenant-Colonel Greeley.)

We succeeded finally, on March 1, in closing our long discussed agreement with the French Ministries covering timber purchases in France. We are now about to submit to the French Wood Service a long list of the surplus forest products which we expect them to take off our hands under the terms of the agreement, together with a standard scale of prices to apply to them.

As a whole, I now feel greatly encouraged over the prospect of a reasonably prompt and fair settlement for all of our forest purchases and for our surplus stock of timber and fuelwood. We are having difficulty with many owners over absurd claims for damages, but are able in most cases to bring them down to a reasonable figure by taking them up individually in the field.

We have apparently reached the end of the large demands for lumber from the A. E. F. and are closing up that part of the work very rapidly. The French are greatly delighted over our exploitations in the burned timber of the Landes, where we will run 11 mills for some months longer, as long as forestry troops are available to man them. The French foresters have never dreamed of an exploitati of this size and equipment and can not hand us enough compliments about it. I should like, as part of our general work in France and aid to the French, to complete these exploitations before leaving and this will probably be done; but it can not stand in the way of evacuating our units as fast as it is possible to obtain sailing priority for them.

About 24 of our companies, technical and service, are now on road repairs and, compared with the other A. E. F. units, the 20th Engineers is doing more tha its share of this work. I do not begrudge it, however, to the extent that it will not hold our troops back from going home. The latter is the most disappointing feature of the present situation. The 1st Battalion of the 20th with 4 companies has just sailed from Bordeaux, but the prospects of any rapid evacuation of the remaining battalions are still uncertain. We have, however, worked out a plan for running our own embarkation department to the extent of giving very careful attention to the preparation of each unit for embarkation so that it will pass the first inspection by the embarkation officers and not be held by deficiencies in records, medical condition, drill, etc. All of our troops are being gradually transferred to the Landes, where our old camps, which are very comfortable, can be used and the original battalions made up with the companies attached to them when they came to France. Capt. Godwin is giving his entire time, with help from the Regimental Adjutant and from our medical officers in the Landes, to getting each unit in turn ready for embarkation to the last detail and inspecting it rigorously so that it will pass a good inspection by the port commander. We have an arrangement with the General Staff whereby these units can be inspected in our own camps in the Landes and, if satisfactory, go directly from there to the embarkation camp at Bordeaux. They will thus avoid the crowded and disagreeable billeting areas where many units spend several weeks waiting for boats or to c ply with the embarkation requirements. This plan worked well with the 1st Battalion, which passed an excellent inspection and established a good reputation for the regiment with the embarkation officers. We are going to see to it that each successive unit lives up to this reputation. The 1st Battalion was found ready to embark in practically every respect; in fact spent only ten or twelve days at the embarkation camp before sailing. We can do this much for the boys help them get home promptly after they are scheduled to go by the General Staff, but with the delays incident to the whole embarkation program and the fact that our troops must take their turn on the Engineer schedule before they are released at all, it is going to be a slow process and gives us a difficult task in the keeping up of morale.

Colonel Greeley Writes About Forestry Operations in France (Cont.)

Capt. Staebner and Capt. Dunston have both left for the United States. Lt. Col. Chapman has left, and Lt. Col. Peck can probably be released soon after April 15. It still looks as though I would be a four-striper before getting home; but I feel it imperative to see all of the 20th Engineer units out of the country before leaving myself.

Our old friend Col. Joubaire has been appointed Conservateur at Tours and will be down here within a few weeks. He has offered to take me out on some of his forests to mark the coupes (cuttings). After the work slacks up a bit I may have a chance to give some special study, with his assistance, to French forestry and forest management. I am trying to assemble some information which will define and interpret the French forest policy as far as that can be done, with reference to its application and suggestiveness for our conditions at home.

The question of forest education for some of our men has been much to the fore of late. The A. E. F. University is giving quite an extensive course in forestry, including French forestry, to the students there. I have been endeavoring to arrange for a special course in French forestry for the graduates of American forest schools. It now seems possible to add 12 or 15 of our men to the Grande Tournee of French forests taken by the graduating class at Nancy in June and July. This trip will cover at least three of the main forest regions of France, with lectures and demonstrations in typical forests. I feel it is the best opportunity for our graduate foresters to get instruction in French forestry under the best conditions, and hope very much to be able to bring this about.

Status of Road Work on the First of May

The execution of cooperative agreements for the last week in April shows a marked progress in Forest road work. During this week twenty-five agreements were received from the Districts and twenty-one were executed by the Secretary. There remains, however, a large amount of work which must be done at an early date, since even less than one-half the total number of required agreements have been executed. The delays which frequently occurred last year between the date of execution by the local authority and the date of execution by the Secretary have been practically eliminated. Some rather remarkable records have already been made and in all cases the action in Washington is very prompt, the rule of the Forest Service being that no agreement shall remain without action for more than twenty-four hours. A similar ruling seems to have been adopted by the Solicitor and the Secretary.

The Townsend bill, awaiting Congressional action, provides for a Federal Highway Commission which would handle the selection of National Forest projects, actual survey and construction, and the determination of types, as well as all further matters relating to the use of road appropriations. The detrimental effect of such administrative changes in Forest road work has been brought to the attention of the promoters of the bill who show a willingness to modify it so as not to interfere with such work. This bill also provides that the Bureau of Public Roads and Rural Engineering will be taken over by the Federal Highway Commission. The following tabulation shows the status as of May 1:

State	No. Agreements called for by Working Plan	No. Received from Districts executed by Local Authority	No. Executed by Secretary
Alaska	5	0	5
Arizona, D-3	8	6	4
Arkansas	2	0	0
California	11	2	1
Colorado	10	5	4
Group I	1	0	0
Group II	4	0	0
Idaho, D-1	5	4	1
Idaho, D-4	6	0	0
Montana	11	7	7
Nevada	5	1	0
New Mexico	6 or 4	3	1
Oregon	16	8	3
South Dakota	2	1	1
Utah	5	0	0
Washington, D-1	1	0	0
Washington, D-6	8	3	2
Wyoming, D-2	6	3	3
Wyoming, D-4	2	0	0
	114 or 112	43	32

Designs for Summer Homes Within the Forests

Summer homes built within the Forests are often not especially well suited in style to the sites. At present there is no great number of suitable designs on hand in the District offices for showing to permittees. Realizing the need for acceptable and tasty designs, District 2 is planning a photographic exhibit and possibly ground plans of the most attractive cottages within each Forest in the District. The plans and photographs will be furnished by the individual Forest officers, each covering his own vicinity. It is not essential that these buildings shall be on National Forest ground, the most important consideration being the design. When this information is collected at the Denver Office, a number of the best designs will be selected and made available to Supervisors and Rangers, so th they may be better able to advise permittees regarding cabin designs.

Itineraries for National Forest Visitors

The Denver Office is compiling information which should be of material assistance to tourists within the National Forests of the District, in response to a visible need for data covering resorts and routes of travel within the Forests. Tourists, tourist agencies, and commercial clubs are constantly requesting such information. Last season a list of resorts within the Pike and Colorado Forests was prepared and mimeographed for distribution, and the success of the plan warrants its extension to include all the Forests of the District. When all the information concerning all summer resorts, hotels, and ranches in or near the Forests has been collected, it will be condensed and put in mimeographed form for each State, and made available for distribution at the District Office and all Supervisors' headquarters.

Information about resorts will be collected from individual Forests by means of cards on which Forest officers may enter facts of interest concerning their respective Forests. The list and information will finally cover all resorts within or anywhere near National Forests, exclusive of hotels in large cities at some distance from the Forests, such as Denver, Colorado Springs, Pueblo, Boulder, Fort Collins, and the like in Colorado; Sheridan, Laramie, Cheyenne, in Wyoming; and Ely, Minnesota.

The form card to be filled out by individual Forest Officers reads as follows:

Nearest Town or Resort:________________ Pop.______________ Elev.______________ ft.
Lines of Travel to Town:
    Railroads:__________________________ Auto Highways:______________________
Name of Resort:____
Owner or Manager:_______________________ P.O.Address:_________________________
Transportation, Town to Resort: _______________________ Distance:____________ mi.
                    (Stage, Auto, Resort Bus)
Resort Hotel:
    Guest Capacity:__________ Rates: Day:$_____ :Week:$_______ :Month:$__________
Cottages to Rent:
    Number:_________ Number Rooms:____________ Furnished or Unfurnished:____________
    Rates: Week:$_______ ;Month:$__________ ;Season: $______________________
Tents or Other Accommodations: Kind:__________________ Number:__________________
    Rates: Week:$__________ ;Month:$__________________ ;Season:$________________
Resort Attractions:____
                    (Scenic, fishing, hunting, horseback riding, sports)
National Forest in or near which Resort is located:_______________________________

Chugach National Forest Area Reduced

The President has signed a proclamation by which 307,800 acres of land are eliminated from the Chugach National Forest in Alaska. The action results from recommendation by the Secretary of Agriculture after a field examination of the area by experts of the Forest Service.

The elimination consists of two separate tracts. One of these, known as the Ship Creek Area, lies along Knik Arm, in the vicinity of Anchorage, Alaska, a point on the Alaska Railway, and contains about 109,300 acres. The second area

Chugach National Forest Area Reduced (Cont.)

comprises a strip of National Forest land three miles wide along the shores of Kachemack Bay and Cook Inlet, between Fox River and Kasilof River, amounting to 198,500 acres.

Much of the eliminated land is reported by the Forest Service examiners to have agricultural possibilities. This does not mean that extensive and desirable farming lands have thus become available for entry, but there are numerous widely scattered tracts which may eventually make homesteads for energetic people accustomed to frontier life.

It is pointed out by officials that this is the second large elimination from Alaska National Forests made as a result of the land-classification work being done by the Forest Service. In 1915 the Chugach Forest was reduced by nearly six million acres. The present elimination brings the area of the Forest down to approximately 5,500,000 acres with a stand of between seven and eight billion board feet of timber, much of which is valuable for airplane stock and paper pulp.

Rifle Shoot in August

Notice comes to the Weekly Bulletin that the National Rifle Matches, open to marksmen of the Army, Navy, Marine Corps, State militia organizations, and members of gunnery associations will be conducted under the auspices of the War Department in August at the Navy Range at Caldwell, N. J. The reportorial staff of the Weekly Bulletin is too small to permit our having a reporter present at the shoot; so in order that no injustice may be done to any of the field men who may participate through our failure to record their presence, it is requested that the Supervisors and others interested send in the names of all Forest Service men competing and keep us informed of results.

California Continues to Lead

The California Legislature has appropriated $1,000,000 more for land settlement work, and on July 1 will vote on a further $10,000,000 bond issue for the same purpose.

Lectures at Syracuse

A special course of lectures on paper and pulp manufacture, forestry, and the chemistry of forest products is announced by the New York State College of Forestry at Syracuse University.

Among the lectures in the course are "A Forest Products Laboratory and National Defense," by Director C. P. Winslow, Forest Products Laboratory; "Reconstruction and the Conservation of Natural Resources," by Prof. James W. Toumey, Director, Yale Forest School; "Forest Conditions in Canada," by Prof. C. D. Howe, University of Toronto; "Forestry Education," by Prof. Filibert Roth, University of Michigan; and "The Future of the Paper Industry in America," by John S. Bates, Superintendent, Forest Products Laboratory, McGill University.

Guatemala-Honduras Boundary Survey

Mr. George B. Sudworth, Dendrologist, has represented the Forester at various conferences with officials of the State Department and Bureaus of the Department of Agriculture and the U. S. Geological Survey in considering a cooperative plan for a survey of disputed boundary lands lying between the states of Guatemala and Honduras. The international boundary of these two countries has been in dispute for a great many years, and in the meantime agricultural and othe land-value developments in the disputed territory have reached such a degree of importance that the two countries, being unable to arrive at an amicable settlement of their difficulty, have jointly appealed to the American Government for help in adjusting their boundary. After careful consideration, the Secretary of State concluded that there is not sufficient information available on which to base a plan of settlement. No reliable topographic map of the region is availab and likewise the forest, horticultural, and agricultural possibilities of the region are inadequately known. It was proposed, therefore, that the American

Guatemala-Honduras Boundary Survey (Cont.)

Government investigate the region in order to find the value of the various interests, and upon these findings offer an equitable settlement of the boundary line. After extended delays and a great many difficulties the expedition left New Orleans on April 26 to take up this work. The expedition includes two professional tropical foresters, two soil survey experts, and two economic botanists, under the general charge of Major Ashmead, who represents the American Geographic Society and is a scientist of wide experience in tropical work. The original intention of having the region mapped by the U. S. Geological Survey has had to be abandoned for the present, owing to insufficient time for that work before the beginning of the rainy season, about the middle of June.

Washington Notes

Associate Forester A. F. Potter left on May 5 for an extended field trip in District 3 to investigate grazing conditions upon the Coconino, Prescott, and Tonto Forests as they affect Silviculture.

James T. Jardine, Inspector of Grazing, has returned to Washington from a trip to all the Western Districts. The main purpose of this extended trip was to get plans under way for the resumption of intensive reconnaissance in Districts 3, 5, 1, 4, and 2; also for extensive reconnaissance in Districts 3, 5, 6, and 4, which is found necessary to meet urgent needs for information not permitting of delay necessary for the intensive reconnaissance. It is hoped to have the work in full swing shortly. The success of these plans, however, is dependent upon money and men, the personnel being pretty well shot to pieces.

Raphael Zon, Chief of Forest Investigations, represented the National Conservation Association as a delegate at the twenty-third annual meeting of the American Academy of Political and Social Science, held in Philadelphia.

Associate Forester A. F. Potter and C. A. Kolb, Geographer, have been appointed as the Forest Service representatives on the Inter-Departmental Committee on Aerial Surveying, which held its first meeting on May 2 at the Office of the Director of Military Aeronautics. At this meeting organization was completed and working data called for in regard to the map requirements of the various Departments. The committee is composed of representatives of all the map-making and map-using branches of the Government.

E. B. Tanner, formerly lumberman in District 2 and more recently a private citizen attached to a lumber company in Denver, dropped in on us in Washington recently. Mr. Tanner is considering seriously lining up with the Internal Revenue on income tax matters affecting timber holdings.

Laboratory Supplement

Dr. L. F. Hawley, in charge of Derived Products, is absent from the Laboratory on a visit to Seattle, Washington, where he will confer with officials of the Bureau of Mines on plans for cooperative work between that Bureau and the Laboratory on flotation oils.

Friends of A. W. Dohr will be pleased to know that he arrived in New York on the U. S. S. Sierra, on April 17. From New York he went to Camp Mills. We hope he will soon be back at the Laboratory.

The conditioning room of the propeller laboratory now contains 217 propellers. Of these, 40 are Central American mahogany, 33 African mahogany, 9 white oak, 45 red oak, 22 birch, 28 red gum, 37 maple, and 3 poplar.

Practically all the members of the Laboratory did their bit in sending the military memorial fund over the top. Fifty dollars was sent to Washington as requested and a surplus of $1.50 was turned over to the French orphan fund.

A patent has been issued to S. Butterman, of the Laboratory, assignor to the United States, covering one of the waterproof casein glues developed by the Laboratory. It is U. S. Patent No. 1,291,396. Other patents have been applied for on other formulas.

A series of tests on laminated beams is being conducted by timber mechanics for the National Lumber Manufacturers' Association. The association furnishes the material and the Laboratory the testing force. The lumber is southern

Labotatory Supplement (Cont.)

yellow pine, 2"x12"x16', and is bolted together in groups of four or five, depending on actual thickness. The first two beams, tested in third-point bending, ran up to about 50,000 pounds.

James D. Studley, of Timber Physics, is in the South making a survey of seven large sawmills in Louisiana and Mississippi. These mills have a contract to furnish the Railroad Administration with lumber for 100,000 freight cars, but they have had difficulty in drying their yellow pine stock. When Mr. Studley has completed this survey the Laboratory hopes to make recommendations which will improve the quality of the kiln-dried stock without curtailing the present rate of production.

Because of the scarcity of genuine boxwood imported from Turkey, Persia, Corsica, and England, a nd the demand for a suitable substitute, experts of the Laboratory have conducted a search for a native wood of similar properties. Boxwood is in constant demand for wood-engravers' blocks, draftsmen's scales, chessmen, roller-skate wheels, small handles, and certain novelties. Although no wood has been found that matches boxwood for its uniform texture and hardness, smoothness and freedom from gums or resins, several native woods approach it in these qualities. Among these are Florida boxwood, washoo (known as strawberry bush or burning bush) witch hazel, great rhododendron, mountain laurel, thornapple, orangewood, torchwood, mastic, yellow buckeye, yellow cedar, pinon, Arizona cypresses, junipers, and western yew.

A very large number of painted signs are used on the National Forests, but no standard methods for obtaining them have been adopted and the practice of the Districts varies greatly. Much trouble has been experienced with the paint fading or peeling off, and it is felt that the signs are costing more than is necessary. An investigation is being made by the Section of Preservation as to the advisability of the Laboratory's undertaking experimental work to obtain (1) information on proper paint to use under conditions of exposure to weather; (2) the proper design and construction of signs to give longest life and most attractive appearance; and (3) the most economical means of obtaining them.

On Saturday, March 29, the instructional course given by the Laboratory to representatives of several furniture manufacturing concerns came to a close. Fourteen men from eleven different companies in Massachusetts, Indiana, Wisconsin, and Michigan were in attendance. Their expenses were paid by their firms, but the Laboratory gave the course without remuneration.

General lectures on wood structure and identification were given by Mr. Koehler; Mr. Elmendorf lectured on plywood and Mr. Wilson on steam bending. Mr. Sweet and Mr. Teesdale of the section of timber physics, assisted by Messrs. Pomeroy, Eckbo and Brewster conducted laboratory experiments in kiln drying. For the section of preservation Mr. Truax, assisted by Messrs. Jones, Coye, and Lindauer, gave work in glues and plywood.

This is the first attempt the Laboratory has made at this sort of cooperative work, unless we include the classes for inspectors that were held here during the war. It is probable that a repetition of this particular course will be called for. The men in attendance were enthusiastic about the benefits which they obtained from the work and several of them stayed over a few days to continue their studies.

As a sample of the benefit which may accrue to the Laboratory from such efforts, one man in attendance offered, in the name of his firm, permission to the Laboratory to use without charge their bending machines and steam boxes and agreed to furnish all material needed for such experiments. No doubt advantage will be taken of this generous offer.

District 2 - Rocky Mountain District

William Wiche, Deputy Forest Supervisor on the Black Hills National Forest, has resigned after twelve years' service on the Black Hills. Mr. Wiche entered the Service in 1906 as Forest Ranger and has been identified with all phases of the work on the Black Hills Forest since that time. He is going into private business at Custer, South Dakota.

District 2 - Rocky Mountain District (Cont.)

Assistant District Forester Roy Headley of District 5 is gathering information in the Denver Office in connection with his study of the reclassification of Forest Service personnel.

Recreation Engineer Arthur Carhart recently made a preliminary plan for the city playground of Longmont, Colorado. During May he will also lay out municipal camping grounds in the San Isabel National Forest for the cities of Pueblo, Florence, and Canon City. These sites will be improved in cooperation with the municipalities mentioned primarily for the use of motorists and picnickers.

A large area of timber infested with the Black Hills pine bark beetle has been discovered on the San Juan National Forest and it is expected that work looking to the cleaning out of these pests will be started at an early date.

Fred R. Johnson, in charge of planting, in the District Office, recently completed a working plan for the timberland of the Rock Island arsenal. This arsenal is situated on an island in the Mississippi River between Davenport and Rock Island, Illinois, and covers a total area of between 500 and 600 acres. Some 400 acres of the island already bear an overmature and scrubby growth of forest, and the plan will call for a heavy thinning of these stands and the planting of white pine and black walnut. One of the interesting features of the plan is the reforestation of the big gun rifle ranges which have been shot to pieces with heavy shells until they resemble "no man's land" on the battlefields of France.

District 3 - Southwestern District

John A. Adams visited the office recently. He has been recommended for reinstatement and will be in charge of the Mormon Lake District of the Coconino.

Former Forest Examiner J. Wilbur O'Byrne is being reinstated in the Service and will be assigned to timber sale work about May 1 on the Coconino.

Forest Examiner H. L. Burrall was discharged from the Army in March, and will return to this District between May 1 and 15. He was a member of the 29th Engineers, and is reported to have done well as an observer in this Regiment which did some very important work in the big pushes put on by the American Army at Chateau Thierry, St. Mihiel, and in the Argonne Forest.

Former Ranger Carl H. Riblett of the Coconino, who was discharged recently from Master Engineer, 20th Engineers, was in the office today. He is being reinstated and will be assigned to the Sitgreaves Forest.

A trip to timberline on the San Francisco Peaks by Mr. Pearson on April 21 showed that there had been a total precipitation of snow since December 1 of 42 inches, representing 13.5 inches of water content. In places the snow was 7 feet deep and at timber line no runoff had yet occurred.

On the lower Engelmann spruce type the snow was rapidly melting, yet there was practically no runoff due to the light gravelly character of the soil. This is in striking contrast with conditions in the yellow pine type, where the soil is adobe, and where in consequence, the runoff is usually heavy.

A patent fire extinguisher that will not freeze up--one-quart capacity--has been approved by the Forester as a standard piece of equipment to be carried by the Supply Dpot, for ranger stations, lookouts, etc. Each Forest will be supplied with one extinguisher shortly from the Supply Depot. With the extinguisher will be sent a gallon of the liquid, but future supplies of the liquid will be purchased by the District or Supervisors from local funds.

Grazing Examiner C. K. Cooperrider has returned to the District after being at the Madison Laboratory since last fall on special investigative work, all of which was in cooperation with the War Department. In a very short time he will join Mr. Talbot on the Tusayan on special grazing work.

On April 24 the Acting Secretary, C. F. Marvin, approved the Supplemental Intensive Classification Report for the Sitgreaves Forest. Classification of this Forest has been one of the most difficult and complicated classification problems with which we have had to deal and the final approval has been received with a great deal of satisfaction by Examiner King and the office of Lands.

Cooperative agreements for the survey and construction of the Salt River-Pleasant Valley road, and the Snowflake-Pinetop road have been executed by the local authority and sent to Washington; also the cooperative agreement for the construction of the Salt River bridge.

The total amount involved in these four projects is $398,000.

Supervisor Mullen has secured figures from a permittee of his Forest giving the calf crop and sales record since 1900. The calf crop and sales record are actual figures copied from the books of the permittee. According to the figures secured the calf crop for the thirteen years is 39 per cent; in 1918 it was 17 per cent. It is suggested that other Supervisors, if possible, secure similar data extending over a number of years. This would give us some reliable information upon which to base the total number of stock on the range.

Speaking of prophets, in the Daily Bulletin of October 6, 1915, appeared the following item, under the caption "When We Are Old":

"On September 29 the first successful transcontinental wireless telephone message was received at Mare Island, Cal., from Arlington, Va. Who knows that the Forest Ranger of 1920 will not be able to retire his climbers and phone-line worries and talk to his fire guards by wireless telephone? And his fire-guard may be a birdman at that!"

So much history has happened in recent years that 1915 is in truth half a century away, and the prophecy written in that year is more than likely to be a commonplace reality in 1920.

The cooperative agreement for the survey and construction of the Apache Camp-Oracle Road was approved by the Secretary of Agriculture on April 30. The total amount of money involved in this project will be $123,000. Of this total amount, the Federal Government contributes $53,000. The balance is met by Pima and Pinal counties.

The remeasurement of the sample plots on the Coconino in 1918 after a five-year period gave the following results: Measured in cubic contents, the growth per annum was as follows:

Black jack - 4" to 11" d.b.h. - 9.1%
" " -12" to 30" d.b.h. - 2.5%
Yellow pine - 12" to 30" d.b.h. - 1.5%

The increased growth in diameter was very uniform for all diameter classes.

Black jack increased 1" in diameter in 5 years
Yellow pine increased 1" in diameter in 8 years

This growth is for trees with normal crown development. The loss from windfall was between 1 and 2 per cent in trees 12" and over. A slight loss occurred from mistletoe, mostly jack pine trees below 11" in diameter. Eighty per cent of dead black jack is below 11" d.b.h. and 77 per cent of dead yellow pine is over 20". The same law of mortality is followed in stands before cutting. This indicates the silvicultural value of making thinnings of suppressed trees and of removing as much of the mature stand as possible when the forest is first cut over. The highest proportion of mortality is in the intermediate and suppressed crown classes, which indicates that unless trees have normal crown development they are very apt to perish when suddenly exposed to the elements, as after logging. This is no doubt due to the fact that since root development takes place in proportion to crown extension, released, suppressed, and intermediate trees transpire more rapidly after cutting than they can take up moisture, and consequently perish. On account of the open nature of yellow pine stands, this factor is not serious, but results indicate what might be expected from too severe thinnings in Engelmann spruce and Douglas fir stands.

District 4 - Intermountain District

Homer E. Fenn, one of the old standbys of the Forest Service in District 4, has resigned and gone into private business. Mr. Fenn got into the game in Land Office days and served in various capacities under multitudinous titles provided by the Forest Service, winding up as Assistant District Forester in charge of Grazing.

Supervisor Stoddard, of the Targhee Forest, has received announcement of the arrival in the United States of Ranger Jack Albano, who has been overseas for the past eighteen months. Mr. Albano went directly to Fort Upton, where he will receive his discharge from the army. He expects to be ready to take up his work on the Forest about June 1.

District 4 - Intermountain District (Cont.)

Ranger Walter C. Mellenthin, of the Targhee, has tendered his resignation to become effective May 10. The lure of the farm has been so strong that Mr. Mellenthin has decided to break all ties with the Service and till the soil.

At the auction of State lands within the Manti Forest, March 29, 640 acres, with an estimated carrying capacity of 400 head of sheep for the July 1 to October 15 period, sold for $25.25 per acre. The prices paid for all range lands sold by the State on that occasion were the highest ever recorded in this part of Utah.

Grazing Assistant Herbert W. Johnston returned to the Ogden Office last week after an absence of about a year. Mr. Johnston, during a portion of last summer, was on detail to District 1, from which place he enlisted in the army. After considerable time spent in California he went to Camp Mills, Long Island, and thence to Camp Merritt, N. J. During his experience in the army he had the sad disappointment of being ordered for embarkation for France three different times. On one of these occasions he spent forty-six hours on the ship, but was then again returned to camp. Mr. Johnston will immediately take up reconnaissance work in connection with the Sevier-Fillmore-Fishlake job.

On the Fishlake Forest seven recognized cattle associations have constructed 48.86 miles of boundary, drift, and division fences, at a cost of $9,974.10, without any cooperation from the Forest Service. These fences were constructed during the seasons of 1913 to 1918 inclusive. In addition to this range improvement work, a number of these associations have employed riders to look after the cattle and the salting of the stock on the range during the grazing periods. This year seven associations will employ riders and will pay the cost of salting. Two associations are cooperating with the Forest Service on a fifty-fifty basis in the construction of five and one-half miles of drift fence to prevent stock from drifting into larkspur poisonous range.

District 5 - California District

Post office cancellation stamps bearing the words "Help Prevent Forest Fires" will be used this summer in San Francisco, Los Angeles, San Diego, Sacramento, and Fresno. Cancellation stamps inviting the public to visit California's recreation grounds will also be used by the post offices mentioned. This use is to continue for six months. In addition, arrangements have been completed with the Fish and Game Commission by which the back of the new hunting licenses will carry a camp scene together with camp fire propaganda.

The District Forester is just leaving for southern California for a conference with the military authorities in connection with the use of airplanes and dirigible balloons for fire detection and fire fighting purposes during the coming summer.

Dr. John T. Faris will visit several of the National Forests in California during the latter part of May and early in June. Doctor Faris is writing a book, "Seeing the Far West." He has approximately three weeks to give to California, and fifteen days out of that time is to be spent within the National Forests. He plans to get into the Angeles, Cleveland, Sequoia, Sierra, Eldorado, and Shasta.

According to the Supervisor of the Trinity Forest it has been the custom for some years to send a hundred copies of the Weekly News Letter to various residents of the Forest. Some are sent out directly from the Supervisor's office, and others are sent by the district rangers. The paper is read, and then mailed to those who will be particularly interested in that number. Sometimes it is handed to a rancher during a discussion along the lines of one of the articles.

Trinity County, in which most of the Forest lies, has no Farm Adviser, and a great deal of good can be done through the distribution of the Weekly News Letter. This spring the Supervisor wrote a circular letter to each recipient, asking for an expression of opinion as to the benefit derived, and received 26 very interesting letters and at least 12 verbal replies. All but two stated they wished to continue receiving the publication. This indicates clearly that the work is worth while. It is interesting to note that the replies were from people whom the Supervisor considers very progressive.

A new eight-mile fire line has just been completed on the Sierra, on the borderland between brush and timber from Cascadell to Hookers Cove. Heavy brush, a ground cover of pine needles, and rather steep slopes to the south have made this a bad fire region for years, and it is hoped that the fire line will help remedy the condition. A band of sheep will be allowed to feed slowly over this line on their way to higher ranges, thereby reducing still further the fire risk.

District 5 - California District (Cont.)

The county librarian of Lassen County wishes the assistance of the Forest force on the Lassen in getting suitable reading matter to the fire lookouts, and agrees to allow them to keep the books for two weeks or perhaps thirty days. She has promised to send out fire prevention propaganda with library books, if the Forest Service will provide the material.

District 6 - Pacific Coast District

Chief Engineer O. C. Merrill and T. S. Brock, in charge of engraving in the Forester's office, spent several days in the Portland office going over the various projects connected with their work in the District.

Major W. F. Rase was a recent caller at the District Office. He was en route from Camp Fremont (364th Infantry) to Camp Lewis, where he expects to secure his discharge. Major Rase took advantage of a short leave of absence to visit his family at Seaside, Oregon. The 364th Infantry was part of the 91st Division and participated in the battle of the Argonne, where they were kept in battle for nine days and nights, the first time any division of the American Army was in action for so long a time continuously. From the Argonne they were sent to Belgium, where they took part in two battles and were in Ypres at the signing of the armistice. Major Rase will probably return to the Forest Service upon being discharged from the Army.

Lieutenant W. H. M. Woodward has returned from the engineers' sub-depot at Camp Jackson to resume his work as mineral examiner in the District office.

Lieutenant-Colonel C. S. Chapman, of the Tenth Engineers, has returned to Portland.

The Secretary has approved the purchase of an automobile to be used in connection with the timber cruising projects in central Oregon. A light delivery car has been purchased in Portland and sent to Bend, where it will serve three parties in the land exchange cruising projects on the Deschutes and Ochoco and a timber survey party on the Deschutes. The machine will keep each camp supplied with provisions, move camp, pack water to dry camps, and at times carry the men to and from work. It is believed it will be a considerable saving to the Government compared with the cost of hiring teams and trucks at commercial rates on these three projects.

Assistant District Forester Kavanagh and Grazing Examiner Peterson attended the annual meeting of the Oregon Cattle and Horse Growers' Association at Bend, Oregon, April 22 and 23. Mr. Kavanagh addressed the meeting on the subject of cooperation. Mr. Peterson spoke on poisonous plants, illustrating his remarks with maps, charts, and specimens of the more important poisonous plants. Representative Sinnott, chairman of the public lands committee in the next House of Congress, was present and gave an interesting talk on public lands. The association adopted resolutions memorializing Congress to enact a law or laws for control, under a plan similar to that followed by the Forest Service, of the remaining unappropriated and unclassified public domain as national ranges, with provision for settlement on suitable areas within such range.

The White Pine Blister Rust Conference held in Portland, April 23 and 24, called together the largest meeting of plant pathologists ever held in the West. Dr. Haven Metcalf, in charge of the branch of Forest Pathology, with three District representatives--Dr. W. H. Long, of Albuquerque, Dr. E. P. Meinecke, of San Francisco, and Dr. James Weir, of Spokane--and State officials from practically all of the far western States were present. Several pathologists from Canada also attended this conference. Extensive scouting work has failed to reveal white pine blister rust in the pines of the Rocky Mountains and Pacific Coast regions. The most important result of the conference was the formulation of more efficient quarantine regulations affecting gooseberries, currants, and white pine.

Planting operations are in progress on several Forests of the District. The labor problem for planting work is not so serious as it was last year, and no difficulty has been found in securing the men needed for this work.

The weekly issue of a bulletin giving information about the roads in and near the National Forests of the District, from data furnished by the field men, has been resumed for the season. A bulletin giving fishing information for various streams is also issued weekly. These bulletins are sent to the newspapers of the District. The larger papers are making them a feature of their Sunday editions.

Construction work is now going forward on the 10-mile stretch of the Rogue River Trail near Mule Creek, on the Siskiyou. With the completion of this piece of trail Rogue River will have a water grade trail between Alameda and Goldbeach, a distance of about seventy-nine miles. This trail offers opportunity for an interesting hiking or packhorse trip through a very wild and picturesque part of Oregon.

The Standardization Committee of the Western Forestry and Conservation Association held an important meeting in Portland April 24 and 25. District Forester George H. Cecil, as chairman of this Committee, presided at the meeting and made the opening address. Other Forest officers who took part in the program were Messrs. Chapler, Flory, Osborne, and Talbott, of the Portland office; R. H. Rutledge and Elers Koch, of Missoula, and C. L. Hill, of San Francisco. Roy Headley, of San Francisco, was present at part of the meetings.

District 7 - Eastern District

It has been decided to hold the proposed Supervisors' meeting at Asheville during the week beginning Monday, May 19. It is planned to have eighteen representatives of the various Forests attend this meeting, including Forest Supervisors, Deputy Supervisors, and Forest Examiners. The full program and assignment of subjects for discussion to the various men has not yet been completed.

Supervisor E. Murray Bruner, of the Luquillo National Forest, left Porto Rico on April 25 for Santo Domingo to assist the military government in perfecting a forestry law for that island.

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WEEKLY BULLETIN

Forest Service - Washington Office

(Not for publication)

May 5, 1919.

Colonel Greeley Writes About Forestry Operations in France

(The following excerpt is from a letter received by Colonel Graves from Lieutenant-Colonel Greeley.)

We succeeded finally, on March 1, in closing our long discussed agreement with the French Ministries covering timber purchases in France. We are now about to submit to the French Wood Service a long list of the surplus forest products which we expect them to take off our hands under the terms of the agreement, together with a standard scale of prices to apply to them.

As a whole, I now feel greatly encouraged over the prospect of a reasonably prompt and fair settlement for all of our forest purchases and for our surplus stock of timber and fuelwood. We are having difficulty with many owners over absurd claims for damages, but are able in most cases to bring them down to a reasonable figure by taking them up individually in the field.

We have apparently reached the end of the large demands for lumber from the A. E. F. and are closing up that part of the work very rapidly. The French are greatly delighted over our exploitations in the burned timber of the Landes, where we will run 11 mills for some months longer, as long as forestry troops are available to man them. The French foresters have never dreamed of an exploitation of this size and equipment and can not hand us enough compliments about it. I should like, as part of our general work in France and aid to the French, to complete these exploitations before leaving and this will probably be done; but it can not stand in the way of evacuating our units as fast as it is possible to obtain sailing priority for them.

About 24 of our companies, technical and service, are now on road repairs; and, compared with the other A. E. F. units, the 20th Engineers is doing more than its share of this work. I do not begrudge it, however, to the extent that it will not hold our troops back from going home. The latter is the most disappointing feature of the present situation. The 1st Battalion of the 20th with 4 companies has just sailed from Bordeaux, but the prospects of any rapid evacuation of the remaining battalions are still uncertain. We have, however, worked out a plan for running our own embarkation department to the extent of giving very careful attention to the preparation of each unit for embarkation so that it will pass the first inspection by the embarkation officers and not be held by deficiencies in records, medical condition, drill, etc. All of our troops are being gradually transferred to the Landes, where our old camps, which are very comfortable, can be used and the original battalions made up with the companies attached to them when they came to France. Capt. Godwin is giving his entire time, with help from the Regimental Adjutant and from our medical officers in the Landes, to getting each unit in turn ready for embarkation to the last detail and inspecting it rigorously so that it will pass a good inspection by the port commander. We have an arrangement with the General Staff whereby these units can be inspected in our own camps in the Landes and, if satisfactory, go directly from there to the embarkation camp at Bordeaux. They will thus avoid the crowded and disagreeable billeting areas where many units spend several weeks waiting for boats or to comply with the embarkation requirements. This plan worked well with the 1st Battalion, which passed an excellent inspection and established a good reputation for the regiment with the embarkation officers. We are going to see to it that each successive unit lives up to this reputation. The 1st Battalion was found ready to embark in practically every respect; in fact spent only ten or twelve days at the embarkation camp before sailing. We can do this much for the boys to help them get home promptly after they are scheduled to go by the General Staff; but with the delays incident to the whole embarkation program and the fact that our troops must take their turn on the Engineer schedule before they are released at all, it is going to be a slow process and gives us a difficult task in the keeping up of morale.

Colonel Greeley Writes About Forestry Operations in France (Cont.)

Capt. Staebner and Capt. Dunston have both left for the United States. Lt. Col. Chapman has left, and Lt. Col. Peck can probably be released soon after April 15. It still looks as though I would be a four-striper before getting home; but I feel it imperative to see all of the 20th Engineer units out of the country before leaving myself.

Our old friend Col. Joubaire has been appointed Conservateur at Tours and will be down here within a few weeks. He has offered to take me out on some of his forests to mark the coupes (cuttings). After the work slacks up a bit I may have a chance to give some special study, with his assistance, to French forestry and forest management. I am trying to assemble some information which will define and interpret the French forest policy as far as that can be done, with reference to its application and suggestiveness for our conditions at home.

The question of forest education for some of our men has been much to the fore of late. The A. E. F. University is giving quite an extensive course in forestry, including French forestry, to the students there. I have been endeavoring to arrange for a special course in French forestry for the graduates of American forest schools. It now seems possible to add 12 or 15 of our men to the Grande Tournee of French forests taken by the graduating class at Nancy in June and July. This trip will cover at least three of the main forest regions of France, with lectures and demonstrations in typical forests. I feel it is the best opportunity for our graduate foresters to get instruction in French forestry under the best conditions, and hope very much to be able to bring this about.

Status of Road Work on the First of May

The execution of cooperative agreements for the last week in April shows a marked progress in Forest road work. During this week twenty-five agreements were received from the Districts and twenty-one were executed by the Secretary. There remains, however, a large amount of work which must be done at an early date, since even less than one-half the total number of required agreements have been executed. The delays which frequently occurred last year between the date of execution by the local authority and the date of execution by the Secretary have been practically eliminated. Some rather remarkable records have already been made and in all cases the action in Washington is very prompt, the rule of the Forest Service being that no agreement shall remain without action for more than twenty-four hours. A similar ruling seems to have been adopted by the Solicitor and the Secretary.

The Townsend bill, awaiting Congressional action, provides for a Federal Highway Commission which would handle the selection of National Forest projects, actual survey and construction, and the determination of types, as well as all further matters relating to the use of road appropriations. The detrimental effect of such administrative changes in Forest road work has been brought to the attention of the promoters of the bill who show a willingness to modify it so as not to interfere with such work. This bill also provides that the Bureau of Public Roads and Rural Engineering will be taken over by the Federal Highway Commission. The following tabulation shows the status as of May 1:

State	No. Agreements called for by Working Plan	No. Received from Districts executed by Local Authority	No. Executed by Secretary
Alaska	5	0	5
Arizona, D-3	8	6	4
Arkansas	2	0	0
California	11	2	1
Colorado	10	5	4
Group I	1	0	0
Group II	4	0	0
Idaho, D-1	5	4	1
Idaho, D-4	6	0	0
Montana	11	7	7
Nevada	5	1	0
New Mexico	6 or 4	3	1
Oregon	16	8	3
South Dakota	2	1	1
Utah	5	0	0
Washington, D-1	1	0	0
Washington, D-6	8	3	2
Wyoming, D-2	6	3	3
Wyoming, D-4	2	0	0
	114 or 112	43	32

Designs for Summer Homes Within the Forests

Summer homes built within the Forests are often not especially well suited in style to the sites. At present there is no great number of suitable designs on hand in the District offices for showing to permittees. Realizing the need for acceptable and tasty designs, District 2 is planning a photographic exhibit and possibly ground plans of the most attractive cottages within each Forest in the District. The plans and photographs will be furnished by the individual Forest officers, each covering his own vicinity. It is not essential that these buildings shall be on National Forest ground, the most important consideration being the design. When this information is collected at the Denver Office, a number of the best designs will be selected and made available to Supervisors and Rangers, so that they may be better able to advise permittees regarding cabin designs.

Itineraries for National Forest Visitors

The Denver Office is compiling information which should be of material assistance to tourists within the National Forests of the District, in response to a visible need for data covering resorts and routes of travel within the Forests. Tourists, tourist agencies, and commercial clubs are constantly requesting such information. Last season a list of resorts within the Pike and Colorado Forests was prepared and mimeographed for distribution, and the success of the plan warrants its extension to include all the Forests of the District. When all the information concerning all summer resorts, hotels, and ranches in or near the Forests has been collected, it will be condensed and put in mimeographed form for each State, and made available for distribution at the District Office and all Supervisors' headquarters.

Information about resorts will be collected from individual Forests by means of cards on which Forest officers may enter facts of interest concerning their respective Forests. The list and information will finally cover all resorts within or anywhere near National Forests, exclusive of hotels in large cities at some distance from the Forests, such as Denver, Colorado Springs, Pueblo, Boulder, Fort Collins, and the like in Colorado; Sheridan, Laramie, Cheyenne, in Wyoming; and Ely, Minnesota.

The form card to be filled out by individual Forest Officers reads as follows:

Nearest Town or Resort:__________ Pop.__________ Elev.__________ft
Lines of Travel to Town:
Railroads:__________ Auto Highways:__________
Name of Resort:__________
Owner or Manager:__________ P.O.Address:__________
Transportation, Town to Resort:__________ Distance:__________mi.
(Stage, Auto, Resort Bus)
Resort Hotel:
Guest Capacity:__________ Rates: Day:$_____:Week:$_____:Month:$__________
Cottages to Rent:
Number:__________ Number Rooms:__________ Furnished or Unfurnished:__________
Rates: Week:$_____;Month:$_____;Season: $__________
Tents or Other Accommodations: Kind:__________ Number:__________
Rates: Week:$_____;Month:$_____;Season:$__________
Resort Attractions:__________
(Scenic, fishing, hunting, horseback riding, sports)
National Forest in or near which Resort is located:__________

Chugach National Forest Area Reduced

The President has signed a proclamation by which 307,800 acres of land are eliminated from the Chugach National Forest in Alaska. The action results from recommendation by the Secretary of Agriculture, after a field examination of the area by experts of the Forest Service.

The elimination consists of two separate tracts. One of these, known as the Ship Creek Area, lies along Knik Arm, in the vicinity of Anchorage, Alaska, a point on the Alaska Railway, and contains about 109,300 acres. The second area

Chugach National Forest Area Reduced (Cont.)

comprises a strip of National Forest land three miles wide along the shores of Kachemack Bay and Cook Inlet, between Fox River and Kasilof River, amounting to 198,500 acres.

Much of the eliminated land is reported by the Forest Service examiners to have agricultural possibilities. This does not mean that extensive and desirable farming lands have thus become available for entry, but there are numerous widely scattered tracts which may eventually make homesteads for energetic people accustomed to frontier life.

It is pointed out by officials that this is the second large elimination from Alaska National Forests made as a result of the land-classification work being done by the Forest Service. In 1915 the Chugach Forest was reduced by nearly six million acres. The present elimination brings the area of the Forest down to approximately 5,500,000 acres with a stand of between seven and eight billion board feet of timber, much of which is valuable for airplane stock and paper pulp.

Rifle Shoot in August

Notice comes to the Weekly Bulletin that the National Rifle Matches, open to marksmen of the Army, Navy, Marine Corps, State militia organizations, and members of gunnery associations will be conducted under the auspices of the War Department in August at the Navy Range at Caldwell, N. J. The reportorial staff of the Weekly Bulletin is too small to permit our having a reporter present at the shoot; so in order that no injustice may be done to any of the field men who may participate through our failure to record their presence, it is requested that the Supervisors and others interested send in the names of all Forest Service men competing and keep us informed of results.

California Continues to Lead

The California Legislature has appropriated $1,000,000 more for land settlement work, and on July 1 will vote on a further $10,000,000 bond issue for the same purpose.

Lectures at Syracuse

A special course of lectures on paper and pulp manufacture, forestry, and the chemistry of forest products is announced by the New York State College of Forestry at Syracuse University.

Among the lectures in the course are "A Forest Products Laboratory and National Defense," by Director C. P. Winslow, Forest Products Laboratory; "Reconstruction and the Conservation of Natural Resources," by Prof. James W. Toumey, Director, Yale Forest School; "Forest Conditions in Canada," by Prof. C. D. Howe, University of Toronto; "Forestry Education," by Prof. Filibert Roth, University of Michigan; and "The Future of the Paper Industry in America," by John S. Bates, Superintendent, Forest Products Laboratory, McGill University.

Guatemala-Honduras Boundary Survey

Mr. George B. Sudworth, Dendrologist, has represented the Forester at various conferences with officials of the State Department and Bureaus of the Department of Agriculture and the U. S. Geological Survey in considering a coöperative plan for a survey of disputed boundary lands lying between the states of Guatemala and Honduras. The international boundary of these two countries has been in dispute for a great many years, and in the meantime agricultural and other land-value developments in the disputed territory have reached such a degree of importance that the two countries, being unable to arrive at an amicable settlement of their difficulty, have jointly appealed to the American Government for help in adjusting their boundary. After careful consideration, the Secretary of State concluded that there is not sufficient information available on which to base a plan of settlement. No reliable topographic map of the region is availabl and likewise the forest, horticultural, and agricultural possibilities of the region are inadequately known. It was proposed, therefore, that the American

Guatemala-Honduras Boundary Survey (Cont.)

Government investigate the region in order to find the value of the various interests, and upon these findings offer an equitable settlement of the boundary line. After extended delays and a great many difficulties the expedition left New Orleans on April 26 to take up this work. The expedition includes two professional tropical foresters, two soil survey experts, and two economic botanists, under the general charge of Major Ashmead, who represents the American Geographic Society and is a scientist of wide experience in tropical work. The original intention of having the region mapped by the U. S. Geological Survey has had to be abandoned for the present, owing to insufficient time for that work before the beginning of the rainy season, about the middle of June.

Washington Notes

Associate Forester A. F. Potter left on May 5 for an extended field trip in District 3 to investigate grazing conditions upon the Coconino, Prescott, and Tonto Forests as they affect Silviculture.

James T. Jardine, Inspector of Grazing, has returned to Washington from a trip to all the Western Districts. The main purpose of this extended trip was to get plans under way for the resumption of intensive reconnaissance in Districts 3, 5, 1, 4, and 2; also for extensive reconnaissance in Districts 3, 5, 6, and 4, which is found necessary to meet urgent needs for information not permitting of delay necessary for the intensive reconnaissance. It is hoped to have the work in full swing shortly. The success of these plans, however, is dependent upon money and men, the personnel being pretty well shot to pieces.

Raphael Zon, Chief of Forest Investigations, represented the National Conservation Association as a delegate at the twenty-third annual meeting of the American Academy of Political and Social Science, held in Philadelphia.

Associate Forester A. F. Potter and C. A. Kolb, Geographer, have been appointed as the Forest Service representatives on the Inter-Departmental Committee on Aerial Surveying, which held its first meeting on May 2 at the Office of the Director of Military Aeronautics. At this meeting organization was completed and working data called for in regard to the map requirements of the various Departments. The committee is composed of representatives of all the map-making and map-using branches of the Government.

E. B. Tanner, formerly lumberman in District 2 and more recently a private citizen attached to a lumber company in Denver, dropped in on us in Washington recently. Mr. Tanner is considering seriously lining up with the Internal Revenue on income tax matters affecting timber holdings.

Laboratory Supplement

Dr. L. F. Hawley, in charge of Derived Products, is absent from the Laboratory on a visit to Seattle, Washington, where he will confer with officials of the Bureau of Mines on plans for cooperative work between that Bureau and the Laboratory on flotation oils.

Friends of A. W. Dohr will be pleased to know that he arrived in New York on the U. S. S. Sierra, on April 17. From New York he went to Camp Mills. We hope he will soon be back at the Laboratory.

The conditioning room of the propeller laboratory now contains 217 propellers. Of these, 40 are Central American mahogany, 33 African mahogany, 9 white oak, 45 red oak, 22 birch, 28 red gum, 37 maple, and 3 poplar.

Practically all the members of the Laboratory did their bit in sending the military memorial fund over the top. Fifty dollars was sent to Washington as requested and a surplus of $1.50 was turned over to the French orphan fund.

A patent has been issued to S. Butterman, of the Laboratory, assignor to the United States, covering one of the waterproof casein glues developed by the Laboratory. It is U. S. Patent No. 1,291,396. Other patents have been applied for on other formulas.

A series of tests on laminated beams is being conducted by timber mechanics for the National Lumber Manufacturers' Association. The association furnishes the material and the Laboratory the testing force. The lumber is southern yellow pine, 2"x12"x16', and is bolted together in groups of four or five, depending on actual thickness. The first two beams, tested in third-point bending, ran up to about 50,000 pounds.

James D. Studley, of Timber Physics, is in the South making a survey of seven large sawmills in Louisiana and Mississippi. These mills have a contract to furnish the Railroad Administration with lumber for 100,000 freight cars, but they have had difficulty in drying their yellow pine stock. When Mr. Studley has completed this survey the Laboratory hopes to make recommendations which will improve the quality of the kiln-dried stock without curtailing the present rate of production.

Because of the scarcity of genuine boxwood imported from Turkey, Persia, Corsica, and England, and the demand for a suitable substitute, experts of the Laboratory have conducted a search for a native wood of similar properties. Boxwood is in constant demand for wood-engravers' blocks, draftsmen's scales, chessmen, roller-skate wheels, small handles, and certain novelties. Although no wood has been found that matches boxwood for its uniform texture and hardness, smoothness and freedom from gums or resins, several native woods approach it in these qualities. Among these are Florida boxwood, washoo (known as strawberry bush or burning bush) witch hazel, great rhododendron, mountain laurel, thornapple, orangewood, torchwood, mastic, yellow buckeye, yellow cedar, pinon, Arizona cypresses, junipers, and western yew.

A very large number of painted signs are used on the National Forests, but no standard methods for obtaining them have been adopted and the practice of the Districts varies greatly. Much trouble has been experienced with the paint fading or peeling off, and it is felt that the signs are costing more than is necessary. An investigation is being made by the Section of Preservation as to the advisability of the Laboratory's undertaking experimental work to obtain (1) information on proper paint to use under conditions of exposure to weather; (2) the proper design and construction of signs to give longest life and most attractive appearance; and (3) the most economical means of obtaining them.

On Saturday, March 29, the instructional course given by the Laboratory to representatives of several furniture manufacturing concerns came to a close. Fourteen men from eleven different companies in Massachusetts, Indiana, Wisconsin, and Michigan were in attendance. Their expenses were paid by their firms, but the Laboratory gave the course without remuneration.

General lectures on wood structure and identification were given by Mr. Koehler; Mr. Elmendorf lectured on plywood and Mr. Wilson on steam bending. Mr. Sweet and Mr. Teesdale of the section of timber physics, assisted by Messrs. Pomeroy, Eckbo and Brewster conducted laboratory experiments in kiln drying. For the section of preservation Mr. Truax, assisted by Messrs. Jones, Coye, and Lindauer, gave work in glues and plywood.

This is the first attempt the Laboratory has made at this sort of cooperative work, unless we include the classes for inspectors that were held here during the war. It is probable that a repetition of this particular course will be called for. The men in attendance were enthusiastic about the benefits which they obtained from the work and several of them stayed over a few days to continue their studies.

As a sample of the benefit which may accrue to the Laboratory from such efforts, one man in attendance offered, in the name of his firm, permission to the Laboratory to use without charge their bending machines and steam boxes and agreed to furnish all material needed for such experiments. No doubt advantage will be taken of this generous offer.

District 2 - Rocky Mountain District

William Wiche, Deputy Forest Supervisor on the Black Hills National Forest, has resigned after twelve years' service on the Black Hills. Mr. Wiche entered the Service in 1906 as Forest Ranger and has been identified with all phases of the work on the Black Hills Forest since that time. He is going into private business at Custer, South Dakota.

District 2 - Rocky Mountain District (Cont.)

Assistant District Forester Roy Headley of District 5 is gathering information in the Denver Office in connection with his study of the reclassification of Forest Service personnel.

Recreation Engineer Arthur Carhart recently made a preliminary plan for the city playground of Longmont, Colorado. During May he will also lay out municipal camping grounds in the San Isabel National Forest for the cities of Pueblo, Florence, and Canon City. These sites will be improved in cooperation with the municipalities mentioned primarily for the use of motorists and picnickers.

A large area of timber infested with the Black Hills pine bark beetle has been discovered on the San Juan National Forest and it is expected that work looking to the cleaning out of these pests will be started at an early date.

Fred R. Johnson, in charge of planting, in the District Office, recently completed a working plan for the timberland of the Rock Island arsenal. This arsenal is situated on an island in the Mississippi River between Davenport and Rock Island, Illinois, and covers a total area of between 500 and 600 acres. Some 400 acres of the island already bear an overmature and scrubby growth of forest, and the plan will call for a heavy thinning of these stands and the planting of white pine and black walnut. One of the interesting features of the plan is the reforestation of the big gun rifle ranges which have been shot to pieces with heavy shells until they resemble "no man's land" on the battlefields of France.

District 3 - Southwestern District

John A. Adams visited the office recently. He has been recommended for reinstatement and will be in charge of the Mormon Lake District of the Coconino.

Former Forest Examiner J. Wilbur O'Byrne is being reinstated in the Service and will be assigned to timber sale work about May 1 on the Coconino.

Forest Examiner H. L. Burrell was discharged from the Army in March, and will return to this District between May 1 and 15. He was a member of the 29th Engineers, and is reported to have done well as an observer in this Regiment which did some very important work in the big pushes put on by the American Army at Chateau Thierry, St. Mihiel, and in the Argonne Forest.

Former Ranger Carl H. Riblett of the Coconino, who was discharged recently from Master Engineer, 20th Engineers, was in the office today. He is being reinstated and will be assigned to the Sitgreaves Forest.

A trip to timberline on the San Francisco Peaks by Mr. Pearson on April 21 showed that there had been a total precipitation of snow since December 1 of 42 inches, representing 13.5 inches of water content. In places the snow was 7 feet deep and at timber line no runoff had yet occurred.

On the lower Engelmann spruce type the snow was rapidly melting, yet there was practically no runoff due to the light gravelly character of the soil. This is in striking contrast with conditions in the yellow pine type, where the soil is adobe, and where in consequence, the runoff is usually heavy.

A patent fire extinguisher that will not freeze up--one-quart capacity--has been approved by the Forester as a standard piece of equipment to be carried by the Supply Dpot, for ranger stations, lookouts, etc. Each Forest will be supplied with one extinguisher shortly from the Supply Depot. With the extinguisher will be sent a gallon of the liquid, but future supplies of the liquid will be purchased by the District or Supervisors from local funds.

Grazing Examiner C. K. Cooperrider has returned to the District after being at the Madison Laboratory since last fall on special investigative work, all of which was in cooperation with the War Department. In a very short time he will join Mr. Talbot on the Tusayan on special grazing work.

On April 24 the Acting Secretary, C. F. Marvin, approved the Supplemental Intensive Classification Report for the Sitgreaves Forest. Classification of this Forest has been one of the most difficult and complicated classification problems with which we have had to deal and the final approval has been received with a great deal of satisfaction by Examiner King and the office of Lands.

Cooperative agreements for the survey and construction of the Salt River-Pleasant Valley road, and the Snowflake-Pinetop road have been executed by the local authority and sent to Washington; also the cooperative agreement for the construction of the Salt River bridge.

The total amount involved in these four projects is $398,000.

Supervisor Mullen has secured figures from a permittee of his Forest giving the calf crop and sales record since 1900. The calf crop and sales record are actual figures copied from the books of the permittee. According to the figures secured the calf crop for the thirteen years is 39 per cent; in 1918 it was 17 per cent. It is suggested that other Supervisors, if possible, secure similar data extending over a number of years. This would give us some reliable information upon which to base the total number of stock on the range.

Speaking of prophets, in the Daily Bulletin of October 6, 1915, appeared the following item, under the caption "When We Are Old":

"On September 29 the first successful transcontinental wireless telephone message was received at Mare Island, Cal., from Arlington, Va. Who knows that the Forest Ranger of 1920 will not be able to retire his climbers and phone-line worries and talk to his fire guards by wireless telephone? And his fire-guard may be a birdman at that!"

So much history has happened in recent years that 1915 is in truth half a century away, and the prophecy written in that year is more than likely to be a commonplace reality in 1920.

The cooperative agreement for the survey and construction of the Apache Camp-Oracle Road was approved by the Secretary of Agriculture on April 30. The total amount of money involved in this project will be $123,000. Of this total amount, the Federal Government contributes $53,000. The balance is met by Pima and Pinal counties.

The remeasurement of the sample plots on the Coconino in 1918 after a five-year period gave the following results: Measured in cubic contents, the growth per annum was as follows:

Black jack - 4" to 11" d.b.h. - 9.1%
" " -12" to 30" d.b.h. - 2.5%
Yellow pine - 12" to 30" d.b.h. - 1.5%

The increased growth in diameter was very uniform for all diameter classes.

Black jack increased 1" in diameter in 5 years
Yellow pine increased 1" in diameter in 8 years

This growth is for trees with normal crown development. The loss from windfall was between 1 and 2 per cent in trees 12" and over. A slight loss occurred from mistletoe, mostly jack pine trees below 11" in diameter. Eighty per cent of dead black jack is below 11" d.b.h. and 77 per cent of dead yellow pine is over 20". The same law of mortality is followed in stands before cutting. This indicates the silvicultural value of making thinnings of suppressed trees and of removing as much of the mature stand as possible when the forest is first cut over. The highest proportion of mortality is in the intermediate and suppressed crown classes, which indicates that unless trees have normal crown development they are very apt to perish when suddenly exposed to the elements, as after logging. This is no doubt due to the fact that since root development takes place in proportion to crown extension, released, suppressed, and intermediate trees transpire more rapidly after cutting than they can take up moisture, and consequently perish. On account of the open nature of yellow pine stands, this factor is not serious, but results indicate what might be expected from too severe thinnings in Engelmann spruce and Douglas fir stands.

District 4 - Intermountain District

Homer E. Fenn, one of the old standbys of the Forest Service in District 4, has resigned and gone into private business. Mr. Fenn got into the game in Land Office days and served in various capacities under multitudinous titles provided by the Forest Service, winding up as Assistant District Forester in charge of Grazing.

Supervisor Stoddard, of the Targhee Forest, has received announcement of the arrival in the United States of Ranger Jack Albano, who has been overseas for the past eighteen months. Mr. Albano went directly to Fort Upton, where he will receive his discharge from the army. He expects to be ready to take up his work on the Forest about June 1.

District 4 - Intermountain District (Cont.)

Ranger Walter C. Mellenthin, of the Targhee, has tendered his resignation to become effective May 10. The lure of the farm has been so strong that Mr. Mellenthin has decided to break all ties with the Service and till the soil.

At the auction of State lands within the Manti Forest, March 29, 640 acres, with an estimated carrying capacity of 400 head of sheep for the July 1 to October 15 period, sold for $25.25 per acre. The prices paid for all range lands sold by the State on that occasion were the highest ever recorded in this part of Utah.

Grazing Assistant Herbert W. Johnston returned to the Ogden Office last week after an absence of about a year. Mr. Johnston, during a portion of last summer, was on detail to District 1, from which place he enlisted in the army. After considerable time spent in California he went to Camp Mills, Long Island, and thence to Camp Merritt, N. J. During his experience in the army he had the sad disappointment of being ordered for embarkation for France three different times. On one of these occasions he spent forty-six hours on the ship, but was then again returned to camp. Mr. Johnston will immediately take up reconnaissance work in connection with the Sevier-Fillmore-Fishlake job.

On the Fishlake Forest seven recognized cattle associations have constructed 48.86 miles of boundary, drift, and division fences, at a cost of $9,974.10, without any cooperation from the Forest Service. These fences were constructed during the seasons of 1913 to 1918 inclusive. In addition to this range improvement work, a number of these associations have employed riders to look after the cattle and the salting of the stock on the range during the grazing periods. This year seven associations will employ riders and will pay the cost of salting. Two associations are cooperating with the Forest Service on a fifty-fifty basis in the construction of five and one-half miles of drift fence to prevent stock from drifting into larkspur poisonous range.

District 5 - California District

Post office cancellation stamps bearing the words "Help Prevent Forest Fires" will be used this summer in San Francisco, Los Angeles, San Diego, Sacramento, and Fresno. Cancellation stamps inviting the public to visit California's recreation grounds will also be used by the post offices mentioned. This use is to continue for six months. In addition, arrangements have been completed with the Fish and Game Commission by which the back of the new hunting licenses will carry a camp scene together with camp fire propaganda.

The District Forester is just leaving for southern California for a c ference with the military authorities in connection with the use of airplanes and dirigible balloons for fire detection and fire fighting purposes during the comin summer.

Dr. John T. Faris will visit several of the National Forests in California during the latter part of May and early in June. Doctor Faris is writing book, "Seeing the Far West." He has approximately three weeks to give to California, and fifteen days out of that time is to be spent within the National Forests. He plans to get into the Angeles, Cleveland, Sequoia, Sierra, Eldorado, and Shasta.

According to the Supervisor of the Trinity Forest it has been the cust for some years to send a hundred copies of the Weekly News Letter to various residents of the Forest. Some are sent out directly from the Supervisor's office, and others are sent by the district rangers. The paper is read, and then mailed to those who will be particularly interested in that number. Sometimes it is han ed to a rancher during a discussion along the lines of one of the articles.

Trinity County, in which most of the Forest lies, has no Farm Adviser, and a great deal of good can be done through the distribution of the Weekly News Letter. This spring the Supervisor wrote a circular letter to each recipient, asking for an expression of opinion as to the benefit derived, and received 26 very interesting letters and at least 12 verbal replies. All but two stated they wished to continue receiving the publication. This indicates clearly that the work is worth while. It is interesting to note that the replies were from people whom the Supervisor considers very progressive.

A new eight-mile fire line has just been completed on the Sierra, on the borderland between brush and timber from Cascadell to Hookers Cove. Heavy brush, a ground cover of pine needles, and rather steep slopes to the south have made this a bad fire region for years, and it is hoped that the fire line will help remedy the condition. A band of sheep will be allowed to feed slowly over this line, on their way to higher ranges, thereby reducing still further the fire risk.

District 5 - California District (Cont.)

The county librarian of Lassen County wishes the assistance of the Forest force on the Lassen in getting suitable reading matter to the fire lookouts, and agrees to allow them to keep the books for two weeks or perhaps thirty days. She has promised to send out fire prevention propaganda with library books, if the Forest Service will provide the material.

District 6 - Pacific Coast District

Chief Engineer O. C. Merrill and T. S. Brock, in charge of engraving in the Forester's office, spent several days in the Portland office going over the various projects connected with their work in the District.

Major W. F. Rase was a recent caller at the District Office. He was en route from Camp Fremont (364th Infantry) to Camp Lewis, where he expects to secure his discharge. Major Rase took advantage of a short leave of absence to visit his family at Seaside, Oregon. The 364th Infantry was part of the 91st Division and participated in the battle of the Argonne, where they were kept in battle for nine days and nights, the first time any division of the American Army was in action for so long a time continuously. From the Argonne they were sent to Belgium, where they took part in two battles and were in Ypres at the signing of the armistice. Major Rase will probably return to the Forest Service upon being discharged from the Army.

Lieutenant W. H. M. Woodward has returned from the engineers' sub-depot at Camp Jackson to resume his work as mineral examiner in the District office.

Lieutenant-Colonel C. S. Chapman, of the Tenth Engineers, has returned to Portland.

The Secretary has approved the purchase of an automobile to be used in connection with the timber cruising projects in central Oregon. A light delivery car has been purchased in Portland and sent to Bend, where it will serve three parties in the land exchange cruising projects on the Deschutes and Ochoco and a timber survey party on the Deschutes. The machine will keep each camp supplied with provisions, move camp, pack water to dry camps, and at times carry the men to and from work. It is believed it will be a considerable saving to the Government compared with the cost of hiring teams and trucks at commercial rates on these three projects.

Assistant District Forester Kavanagh and Grazing Examiner Peterson attended the annual meeting of the Oregon Cattle and Horse Growers' Association at Bend, Oregon, April 22 and 23. Mr. Kavanagh addressed the meeting on the subject of cooperation. Mr. Peterson spoke on poisonous plants, illustrating his remarks with maps, charts, and specimens of the more important poisonous plants. Representative Sinnott, chairman of the public lands committee in the next House of Congress, was present and gave an interesting talk on public lands. The association adopted resolutions memorializing Congress to enact a law or laws for control, under a plan similar to that followed by the Forest Service, of the remaining unappropriated and unclassified public domain as national ranges, with provision for settlement on suitable areas within such range.

The White Pine Blister Rust Conference held in Portland, April 23 and 24, called together the largest meeting of plant pathologists ever held in the West. Dr. Haven Metcalf, in charge of the branch of Forest Pathology, with three District representatives--Dr. W. H. Long, of Albuquerque, Dr. E. P. Meinecke, of San Francisco, and Dr. James Weir, of Spokane--and State officials from practically all of the far western States were present. Several pathologists from Canada also attended this conference. Extensive scouting work has failed to reveal white pine blister rust in the pines of the Rocky Mountains and Pacific Coast regions. The most important result of the conference was the formulation of more efficient quarantine regulations affecting gooseberries, currants, and white pine.

Planting operations are in progress on several Forests of the District. The labor problem for planting work is not so serious as it was last year, and no difficulty has been found in securing the men needed for this work.

The weekly issue of a bulletin giving information about the roads in and near the National Forests of the District, from data furnished by the field men, has been resumed for the season. A bulletin giving fishing information for various streams is also issued weekly. These bulletins are sent to the newspapers of the District. The larger papers are making them a feature of their Sunday editions.

Construction work is now going forward on the 10-mile stretch of the Rogue River Trail near Mule Creek, on the Siskiyou. With the completion of this piece of trail Rogue River will have a water grade trail between Alameda and Goldbeach, a distance of about seventy-nine miles. This trail offers opportunity for an interesting hiking or packhorse trip through a very wild and picturesque part of Oregon.

The Standardization Committee of the Western Forestry and Conservation Association held an important meeting in Portland April 24 and 25. District Forester George H. Cecil, as chairman of this Committee, presided at the meeting and made the opening address. Other Forest officers who took part in the program were Messrs. Chapler, Flory, Osborne, and Talbott, of the Portland office; R. H. Rutledge and Elers Koch, of Missoula, and C. L. Hill, of San Francisco. Roy Headley, of San Francisco, was present at part of the meetings.

District 7 - Eastern District

It has been decided to hold the proposed Supervisors' meeting at Asheville during the week beginning Monday, May 19. It is planned to have eighteen representatives of the various Forests attend this meeting, including Forest Supervisors, Deputy Supervisors, and Forest Examiners. The full program and assignment of subjects for discussion to the various men has not yet been completed.

Supervisor E. Murray Bruner, of the Luquillo National Forest, left Porto Rico on April 25 for Santo Domingo to assist the military government in perfecting a forestry law for that island.

WEEKLY BULLETIN

Forest Service - Washington Office

(Not for publication)

May 12, 1919.

The Larger Program of Forestry

Most members of the Forest Service understand that it is proposed to take a great forward step in forestry. It is proposed to work out and urge the nation to adopt a program that will eventually solve our serious timber problems. The aim of this program will be to bring about the practice of forestry on private timberlands as well as upon public timberlands and to restore to productiveness nonagricultural cut-over lands that have been rendered waste by improper cutting and lack of fire protection. Two papers recently presented by the Forester should be carefully read by every member of the Service. I refer to his Boston address on "Private Forestry" and to his Chicago address on "A National Lumber and Forest Policy." A discussion of the subject has started in the forestry journals and is likely to widen and extend to the lumber and public press. We should follow all of these discussions with the greatest interest because the whole matter is of such importance to forestry that every one of us should be thoroughly acquainted with the principles involved.

Merely keeping in touch with this movement by reading the discussions is not enough. Members of the Service, especially those directly engaged in any kind of forest work, should try to think out the relation of their own work to the whole program. They should endeavor to see how their work fits in. Such thinking in many instances will show up gaps which will need to be filled in by the extension of our work. It will suggest in some instances new and larger activities that ought to be taken up.

If we read about this movement and think out our own relation to it, we shall then find it easy and interesting to discuss the program with other members of the Service and with thinking people outside the Service. Our attitude should be that of expectancy, realizing that a great movement is being launched and that its success is inevitably connected with our own life work and interests. When the movement comes to fruition it will establish the practice of forestry throughout the country. Many interests are involved and much careful thinking and discussion is desirable.

As our ideas become crystallized we should set them down on paper. We should not fail to present any suggestions that occur to us as practicable regarding any feature of the program. Many ideas have already been proposed which are of great value; and much of the program, especially the detailed application of it, is yet to be thought out. In this program the foresters and those engaged upon constructive forest work are in the best position to give well balanced thought to the problem and to shape up the policies that will have to be forthcoming. Let us work our ideas into the form of presentable suggestions, and let us have lots of discussion. Let us get in on this thing which is the biggest thing that the foresters of this country have ever attempted, and let us make our thought, our point of view, and our enthusiasm count.

WM. L. HALL.

Forestry and the Marines

(Extract from "With the Help of God and a Few Marines" by Brigadier-General R. W. Catlin.)

"One thing that struck me while in this training area (near Bourmont) was the remarkable efficiency of the French Forestry Department. Our food was furnished by the supply service of the American Army in France, but our fuel we had to cut for ourselves. This was arranged for by the French Government and foresters and district officers were sent down to supervise the work. Not a tree was cut that the foresters had not marked, and not a twig was allowed to be wasted.

Forestry and the Marines (Continued)

There was none of that slap-dash, extravagant lumbering, such as we Americans have so foolishly indulged in, but a careful, scientific selection of such timbers as might be cut without robbing the forests. It was merely a matter of beneficial thinning out, and when this war is over France will still have intact and flourishing such of her forests as the shells have spared. Necessity has taught her this; must we in America wait for the pinch of necessity?"

Airplane Patrol in National Forests June 1

Patrol of National Forests by Army airplanes to give early warning of fires developing in the forests will begin June 1, according to arrangements completed with the War Department by the Forest Service. On the same day observations covering a large part of the Angeles National Forest will be begun from a captive balloon stationed over the Army Balloon School near Arcadia, Calif.

Two routes of airplane patrol work will be operated from March Field, twelve miles southeast of Riverside, Calif. Two planes will be used on each route, the routes will each be approximately 100 miles long, and each route will be covered twice a day.

The airplane routes ffom March Field will afford an opportunity to survey about 2,000 square miles in the Angeles and Cleveland National Forests. The airplanes are not equipped with wireless telephone apparatus of such a nature that they can communicate with the ground without the installation of expensive ground instruments. Warnings of fires will be transmitted by means of parachute messages dropped over a town, the finder to telephone them to the Forest Service by special landings made to report by telephone, and by returning to the base and reporting from March Field direct to the forest supervisor.

Fires will be located and reported by squares drawn on duplicate maps, one to be in the possession of each airplane observer and another to be in the office of the Forest Supervisor.

The observation balloon over the Arcadia Field is to be maintained at an elevation of about 3,000 feet from 7 a.m. until 2:30 p. m. each day. The student detachment learning observation, now stationed at Mount Wilson, also will render fire lookout service. Reports of fires from both the balloon observer and the Mount Wilson detachment will be telephoned to the Army Balloon School and transmitted to the Forest Service office at Los Angeles.

A fire-fighting truck, with ten enlisted men, will be stationed at Arcadia as part of the fire suppression forces, and will be subject to the call of the Forest Service.

What is a Good Box?

A meeting of great interest to merchants, manufacturers, and shippers was held under the auspices of the Civic Industrial Division of the American Lumber Congress on April 17. C. P. Winslow, Director of the Forest Products Laboratory, discussed the requirements of good packing and the possibilities of improving materially the present packing containers. It is estimated that $10,000,000 are lost each year in the shipment of weak packing boxes and that 25 per cent more shipping space is used than necessary. Mr. Winslow told of the facilities offered by the Forest Products Laboratory for the development of new industrial uses for wood and the large problems presented during the war in saving space and reducing the cost of overseas shipments.

During the war the Forest Products Laboratory trained many inspectors of packing boxes, a continuous packing service school being conducted. The Laboratory has recently given a course of instruction to representatives sent by furniture manufacturers in the kiln drying of wood and on glues, veneers, plywood, and built-up wood construction. In this way the information collected at the Laboratory is placed in the hands of the manufacturers in a practical manner. Through the cooperation of the Chicago Association of Commerce a similar course has been given to representatives of large concerns using many boxes and containers. The men who took this course of instruction were selected by the Chicago Association of Commerce. The number was limited to ten, one from each of ten companies. Instruction work was conducted at Madison at the Forest Products Laboratory, beginning Monday, April 28, and continued for ten days. The Forest Products Laboratory

What is a Good Box? (Continued)

has made no charge for this course of instruction. The course included a study of the following subjects:

1. Nailing--Commercial packages are frequently insufficiently nailed. Laboratory data is available as to many details in regard to the proper nailing, including size and types of nails to be used.

2. Screws and Strappings--With the testing machine the strength of strapping can be demonstrated. Data show the injurious effect of driving screws.

3. Thickness of Material--Demonstration of principles of balanced box construction. Increasing thickness of material alone does not necessarily afford additional strength.

4. Cleats--Greater reliability of cleated over uncleated boxes.

5. Effect of Contents on Serviceability of Package--Tests show that oftentimes the character of the contents influences the type of construction.

6. Methods of Packing--Packing as well as container design affects the amount of shipping space and the durability of the package.

7. Species--Laboratory data on the strength of various species allow grouping of woods according to values for box manufacture. Tests indicate that thickness of material should depend on species used.

8. Crating--Data are available on comparative size of members, types of corners on joints, sizes of nails and bolts.

9. Supplementary data are available on associated problems, such as drying of wood, wood structure, glues, methods of wood identification, etc.

Equipment--Two hexagonal drum testing machines, the larger capable of taking containers up to 4 ft. in length and 800 pounds in weight; apparatus for drop tests; numerous small machines for nail pulling and static tests; other equipment necessary for box construction and demonstration purposes.

A motion picture reel showing the method of designing, testing and improving shipping containers was shown. A box was shown under construction; and after loading with material of approximately the same weight and character as that used in service it was tested by means of a drop test. A box similar in type but more economically designed was then tested and equal strength was shown with a saving of 15 per cent in shipping space. The boxes were juggled in a revolving drum or tumbling machine 14 feet in diameter revolving at one revolution per minute. This test simulates conditions of actual service and is really an accelerated service test. The effect of using a different number of nails on each nailing edge was shown. The effect of the accelerated service test on a crated gasoline engine weighing about 800 pounds was also shown. Various compression tests were made which demonstrated the relative rigidity or weaving resistance and simulated service conditions in large piles of goods. A cornerwise compression test demonstrated the advantage of proper end construction and the value of cleats. The resistance of nails to withdrawal was measured in a testing machine and the various details of box construction were separately tested.

A Forest Policy for North Carolina

The North Carolina Geological & Economic Survey has issued a pamphlet setting forth the importance of the forests of North Carolina in their relation to the wealth of the State and the Nation. It makes mention of the very wasteful and destructive policy which is being pursued toward the forests, and contrasts this with the policy of the United States and of some of the other States of this country and especially of some of the foreign countries toward their forest cover. As a step toward the better utilization of the North Carolina forests the survey makes the following suggestions:

1. Enforcement of our present forest fire law through a State appropriation of $10,000 annually, to be used cooperatively with the Federal Government and with local individuals and associations, for establishing a forest fire patrol over those areas which are recognized as of first importance from the standpoint of present and future timber supply and stream protection.

A Forest Policy for North Carolina (Continued)

2. An annual appropriation of $2,500 for the protection and maintenance of Mitchell State Park, purchased through an act of the legislature of 1915.

3. An appropriation of $5,000 annually for experiments in reforestation and tree planting, a portion of this to be used in connection with a course in forestry at the State university, and for other educational purposes.

Summer Meeting of New York Foresters at Ranger School

Dean Baker, of the New York State College of Forestry, has invited the New York Section of the Society of American Foresters to hold its summer meeting at the State Ranger School, Wanakena, N. Y., and the invitation has been accepted for July 29 to 31. This invitation gives the Foresters a chance to see something of the Ranger School in operation and of the plantations and other experimental work done there, an opportunity which doubtless will be eagerly welcomed by the members of the New York Section. There will be field trips on July 30 and 31 and a camp fire on the evening of July 30.

Montana State Forester Plans for Betterment of Industry

The following recommendations have been made by the office of the Montana State Forester in the interest of the proper administration of lumbering--the third in importance of Montana's industries:

The State of Montana should:

Commit herself, like the National Government, to a policy calling for the highest use of all lands;

Classify the forest lands of the State and designate those of greatest value for permanent forest production, regardless of ownership.

Adopt measures which assist private, State, and Federal owners to consolidate holdings so as to permit economical administration.

Exercise some control over private lands with reference particularly to:

1. Methods of cutting so as to insure restocking of the land with trees;
2. Disposal of brush and debris left from logging to minimize fire risk;
3. Distribution of cutting with reference to permanent industries;
4. Control of forest fires.

Cooperate with the National Forest Service in regulating the cut to the limits of forest productivity. To do this will mean:

1. Some control over the number, location, and size of sawmills;
2. Collection of data on rate of growth of timber, distribution of age classes, etc.;
3. Silvicultural management of State forests;
4. Preventing the withholding from market of ripe timber on privately owned land when such a policy interferes with the development of local communities.

Adopt measures for educating and making good citizens of woods workers.

Directly assist the lumber industry in:

Gathering statistics of lumber manufacture, shipments and consumption;

Making a study of Montana markets and taking such action as may be possible to reduce the cost of lumber to the consumer;

Educating the people to use Montana forest products by giving authentic information as to their uses and values;

Making a study of wood substitutes;

Montana State Forester Plans for Betterment of Industry (Cont.)

Studying efficiency of methods of logging and milling in order to reduce costs;

Creating an organization capable of impartially appraising stumpage values and of scaling logs when there is dispute.

Minnesota Forestry Laws Changed

The Minnesota legislature made several changes in the laws affecting forestry in that State.

The most interesting is the combination of offices whereby State Forester Cox becomes Surveyor General of Logs and Lumber. In this connection several changes in the matter of remuneration for the various deputy surveyors-general were made, by which they are put on a salary basis instead of being on a fee basis.

Cox had asked for $330,000, on the basis of the recent calamity and the experience of previous years. He got $65,000, an increase of $15,000 over past appropriations, but only after a very bitter debate during which at one time it appeared as if the office would be abolished altogether.

Hawaiian Forest Reserves

The work of examining and setting apart a general forest reserve system in the Territory of Hawaii was completed on December 31, 1918, when Governor C.J. McCarthy signed proclamations creating five new forest reserves and thereby adding 41,355 acres to the area of forested lands reserved for protection of water resources.

These new reserves bring the present total area of government forest lands, placed in the hands of the Board of Agriculture and Forestry for protection and administration, up to 554,842 acres, and the total area of all lands, including those privately owned, recommended to be treated in the same manner, up to 814,926 acres. Of this total area, therefore, 68 per cent belongs to the Territory.

The work of forestry on these Islands, however, does not consist merely in the setting aside of these reserves on paper by official proclamation. This has been the first essential step in this as in any system of forest protection and administration, but during the past few years it has gone hand in hand with actual protection work in the field in the Territory of Hawaii.

From 1910 to the present time the Division of Forestry, by its own efforts and through the cooperation of the Land Office by means of general leases adjacent to forest reserves, constructed new stock-proof fences on a boundary length of 58 miles. Through cooperation with local residents, hundreds of wild cattle, pigs, and goats have been removed from the forest reserve lands. A force of seven forest rangers [illegible] now on active duty on these reserves and patrol for forest fires and trespass of all kinds, repair old and build new fences, plant trees, and take general care of the forest lands. Tree planting by special gangs of tree planters is performed on open areas in the reserves, more particularly on watersheds adjacent to settlements, in order to conserve the water supply.

With the work of examining new lands for forest reserves now accomplished and out of the way, greater efforts will be made to extend the work of improvement and reforestation.

Trees as Memorials in New South Wales

The principal of the Ardlethan Public School, writing to the Australian Forestry Journal, says that while he can not lay claim to having initiated the scheme of planting street trees as memorials for soldiers, he may safely claim to have been the first in New South Wales to adopt such a tribute in connection with a public school.

In August, 1917, this principal writes, an avenue was laid out in the Ardlethan School playground and a tree was planted for each Ardlethan soldier, an oxidized copper plate being attached to each tree with a record of the name, rank, and unit of each man. At the entrance to the playground the local clergy planted memorials for soldiers who had fallen; then come those in honor of ex-pupils of the school, and finally those for others who enlisted locally. In this way an avenue of 125 trees has been made and forms a complete Roll of Honor which will stand for all time.

Trees as Memorials in New South Wales (Cont.)

The preparation of the ground was undertaken by the pupils, but the trees were planted by relatives or friends of the soldiers thus honored.

Another Australian Memorial Grove

The Queensland correspondent of the Australasian recently recorded the planting of 30,000 trees in Anzac Park by a single public-spirited citizen at his own expense, 16,000 of them being in memory of soldiers who had fallen in the war.

Governor Davis Suggests Some Changes

Governor D. W. Davis of Idaho in his message to the Legislature included the following recommendations of particular interest to foresters:

"Conservation of Natural Resources. The initiation of a constructive policy for the conservation of the natural resources of the State, particularly its unused water power, is peculiarly within the province of the Legislature and should receive your earnest consideration.

The Fish and Game Department should be reorganized to promote more effectively the purpose of its creation. A more careful accounting of the fees handled by the department as well as of its expenditures should be required by law."

Beginning at Home

Community service is rightly one of the big ideals of the Service. District Forester DuBois accurately states the ideal when he says that the Supervisor's function is not confined merely to official business within the bounds of his Forest, but extends to his being a potent factor in the whole area tributary to his Forest.

But we have a big "community" problem right at home, on the doorstep. That problem is to give Rangers and Rangers' families living quarters and surroundings worthy of their position and that will be, so far as possible, an offset to their isolation and loneliness. The big problem of the Service right now is the labor problem. It doesn't require strikes and lockouts to make up a "labor situation." All it takes is unrest, and the present labor turn-over in the Service is a startling index to the extent of unrest in our organization.

The two great elements in this unrest are salaries and living conditions. The difficult problem of salaries is being strenuously tackled by the executive officers of the Departments and Bureaus, by Congress, and by the organized employees. A peaceful but deeply significant revolution, instinct with enormous promise, has occurred in the recognition given by the Congressional reclassification commission to the employees themselves. The salary problem is on the road to better days.

But what of the other element? How many field men are condemned to live in uncomfortable, unattractive quarters? What proportion of stations have those elementary necessities,--water systems, bath-tubs, fireplaces, sanitary conveniences, flowers, shrubs, fruit trees? How many fire-guard cabins are light and clean, and have stoves, cots, floors, chairs, and rat-proof cupboards? How many field men themselves try to improve their stations by planting a few native shrubs and trees?

The remedy will come by laying the greatest possible stress on the human side of the Service. Here is an unlimited field for administrative officers. And the field is just as unlimited for Rangers. Fear of a "transfer" and bequeathing the results of his labors to his successor keeps many a man from attempting to convert his Station into a Home. Every Forest Service Station should be as a light set in the darkness, instead of, as too often, a temporary, desolate shack set in the wilderness.

WARD SHEPARD.

Washington Notes

Interest is increasing rapidly in the idea of a National Program of Forestry. The first conference on this program is to be held in Washington May 20 and is representative of States near to Washington, especially Virginia, West Virginia, Maryland, Delaware, and New Jersey. The State Foresters of Virginia, Maryland, and New Jersey will be present, as will representative citizens of all of the States mentioned. The purpose of the conference will be to go over the critical timber and forest situation in the United States, the seriousness of the problems involved, and measures proposed for solution.

During the past week the Forester held conferences in New York City with Conservation Commissioner George D. Pratt of New York, and at Syracuse, N. Y.,with Dean H. P. Baker and his associates in the Forest School. Both of these conferences were with respect to the National Program of Forestry and the part which the States should take in it.

State Forester R. C. Jones of Virginia spent a day at the Forest Service last week going over the proposed program of forestry as it affects State interests. Mr. Jones feels that a great deal of educational work will be necessary in order to bring the people of the Southern States to a realization of the gravity of the timber situation and the need of effective State and Federal action.

Laboratory Supplement

S. A. Mahood spent last week in Lottie, La., looking into the storax production there to determine possible quantity production to compete with imported storax.

Otto Kress is on his way to Washington for a brief stay.

Thirty members of the Northwest Club of the Extension Table Manufacturers' Association visited the Laboratory and had the work explained to them by Messrs. Winslow, Teesdale, and Thelen.

L. F. Hawley has returned to Madison from a two-weeks' western trip on which he worked out a plan for effective cooperation with the Bureau of Mines.

C. V. Maudlin has returned to the Laboratory and will be technical assistant in the Office of the Director, assisting Mr. Don P. Johnston. Mr. Maudlin will work out a system to keep the Director's Office and the personnel of the Laboratory currently in touch with the progress of investigation projects.

Four hundred crossties for use by the C. M. & St. P. R. R. are to receive a pressure treatment at the Laboratory. One hundred ties of Douglas fir and 100 of western larch will be treated with zinc chloride; 100 red oak with wood tar creosote; and 100 red oak, including a few odd species, with a mixture of coal tar and wood tar creosotes.

A number of chair backs have been received at the Laboratory which have checked badly from being put into the bending machine green. The experts of the Laboratory hope to devise methods of drying so as to prevent checking.

Messrs. Winslow, Teesdale, and Newlin are in Washington to attend a conference of representatives of the various bureaus of the War Department with regard to future cooperation.

One hundred and seventy-five laminated walnut gunstock blanks, which have been made up at the Laboratory for the Ordnance Department, have been shipped to the factory for the finishing touches. Blood glue was used on 50 of these stocks and casein glue on 125.

The property transfer from Mr. Beauverd to Mr. Collette, the present Laboratory property custodian, covered 121 typewritten pages. This is reported to be the largest property transfer of record in the Forest Service. It covers 1,600 items and 8,650 articles. Purchases since Mr. Beauverd left, together with property considered expendable until January 1, shows Mr. Collette to be accountable for approximately 10,000 articles.

Al Dohr has resumed his work at the Laboratory. He has just reached home after having seen over six months' service with the Black Hawk Division in France.

Dr. Sherrard has produced a stock food from sawdust. The western white pine sawdust is hydrolyzed with sulphuric acid. During hydrolysis, 20 per cent of the wood is converted into sugars, which are allowed to remain in the wood. Feeding experiments, under the direction of Prof. Morrison of the University of Wisconsin, to determine the palatability of the material, demonstrated that cattle would eat it when combined with either 25 or 50 per cent of mixed feed. In order that the experiments may be continued the Laboratory has agreed to turn out 100 pounds of the stock food per week.

Laboratory Supplement (Continued)

Mr. Rolf Thelen, who has for the past two years of war emergency been on detail in the Washington Office, has returned permanently to the Laboratory. He will assume charge of the Section of Timber Physics. In view, however, of Mr. Thomas' contemplated withdrawal from the organization, and the importance of maintaining without interruption the progress of the work of the Section of Review, Mr. Thelen will for the present devote his major attention to this work and upon Mr. Thomas' withdrawal will temporarily assume direction of it. During this period and until further notice, Mr. Sweet will continue to act in charge of the Section of Timber Physics.

The desirability of starting an arboretum of all kinds of trees which will grow in Madison has been taken up by Mr. Tiemann with Prof. Aust of the horticultural department of the university, and it is expected that most of the local trees will be secured by the university and planted this spring. Letters were prepared to the northern District Foresters requesting shipments of seedlings from a number of western species of conifers which it seems probable will stand this climate. Some of these seedlings have been received already. The list includes the following species: noble fir, silver fir, lodgepole pine, Siberian larch, Scotch pine, limber pine, bristle-cone pine, western white pine, western yellow pine, and western red cedar.

An interesting problem has been solved by the box laboratory. An electric company had been having a large amount of breakage of expensive insulators for high voltage transmission lines. The crates used, while strong and durable, did not seem to protect the contents. The company submitted the difficulty to the Laboratory for solution, and the packing expert of the company, together with several shop foremen, came to the Laboratory to witness the development of a new case and the tests to which it was submitted.

In the space of two days our container experts developed a new type of crate which proved under test to be over 100 per cent stronger, to occupy 15 per cent less space, and to save 15 per cent in the cost of material; still better, breakage of the insulators was entirely eliminated, even under the most severe conditions. Needless to say, everybody was happy over the results.

It is understood that thousands of these insulators are to be shipped to China for the construction of electric power lines there. They hang in strings of two to seven from the crossarms of the towers, the longer strings being necessary to prevent the exceedingly high voltage currents from arcing over to the metal parts of the tower.

District 2 - Rocky Mountain District

Fred B. Agee, of the Pike, has been appointed Supervisor of the Cochetopa National Forest, to take the place of Supervisor Alva A. Simpson who recently resigned from the Service to accept a position as County Superintendent of Roads for Saguache County, Colorado.

Supervisor Arthur T. Upson, of the Sopris National Forest, is to be transferred to Delta, Colorado, where he will take charge of the Uncompahgre National Forest, succeeding Supervisor J. W. Lowell, Jr., who recently resigned to enter private business.

The Dolores timber cruising project on the Montezuma National Forest is again in full swing; four crews are now working on this reconnaissance job under the charge of Deputy Supervisor Wallace Pearce of the Colorado National Forest. Cruising parties are also at work on the Black Hills and Harney National Forests securing data on timber areas for which it is expected that sale applications will be received within the next few years.

The Forest Service window display, which ran for three weeks in Denver and was viewed by over 50,000 people, has recently been moved to Pueblo and installed in a show window of one of the leading firms of that city.

The fire season is at hand. On the Minnesota it is reported serious; the woods are drying out, and the general forest cover is pretty dry. On the Shoshone precipitation is needed and conditions are below normal. The same applies to the Routt and Holy Cross Forests. With these exceptions the conditions are favorable.

District 2 - Rocky Mountain District (Cont.)

The citizens of Cass Lake, Minnesota, have been treated to the novel sight of girls in overalls working in the Forest Service nursery which is located near the city. These young ladies, under the watchful eye of a chaperon, have been doing all kinds of nursery work and doing it as well, if not better, than the men who have formerly been employed at the nursery. The same wages are paid to girls as have hitherto been given man labor.

Fifty thousand pine seedlings recently received from the Cass Lake nursery on the Minnesota National Forest were planted on the Michigan Forest.

District 3 - Southwestern District

John B. Garland, ranger on the Colorado, has resigned to go into private business. Mr. Garland has been a member of the Forest Service since 1910.

Associate Forester Potter, accompanied by District Forester Redington, attended the meeting of the Coconino Cattle Growers' Association, at Flagstaff, Ariz.

Re-examination in 1918 of an area of 480 acres laid out in sample plots on the Coconino National Forest in 1913 and since then subject to unrestricted heavy sheep grazing shows that the total number of live seedlings of western yellow pine was reduced during this 5-year period to 40 per cent of the stand in 1913, the number of seedlings per acre being respectively 374 in 1913 and 151 in 1918. The following facts are brought out:

1. The total amount of reproduction has decreased instead of increased since the establishment of the plots (from 40 to 65 per cent reduction on different plots).

2. The greatest mortality has occurred in the younger (age) and smaller (height) classes. Practically all seedlings which were one year old in 1913 have died. While this heavy mortality may not be due entirely to the effects of grazing, it is thought that the greater part is a result of sheep damage. This supposition is supported by the fact that there is a general reduction in all classes less than 12" high.

3. The greater part (average - 75 per cent) of the surviving reproduction is severely damaged. Comparison of the individual tree records shows that through continuous browsing seedlings are finally killed. Where seedlings are more than 12" high, death may not result but the trees remain stunted for an indefinite period.

4. Under normal conditions, the forest has a tendency to restock itself (see number of seedlings per acre in 1913), but continuous grazing will absolutely prevent this.

Seventy-one and eighty-six per cent, respectively, in two operations in this District is the increase from 1915 to 1918 in the cost of labor item in logging from stump to pond. Using the 1915 costs as 100 per cent, the costs for 1916, 1917, and 1918, respectively, are, for each of the operations:

#1	143%	153%	186%
2	108%	133%	171%

District 4 - Intermountain District

Grazing Examiner Johnston and Forest Guard Butler have taken to the field, and for two months will assist the Geodetic Survey in making a triangulation survey of Utah.

State Fire Warden Gardner of Idaho, a new appointee, assumed his duties May 1. Mr. Gardner is said to be an experienced timber man and is very anxious to get lined up on fire prevention methods.

The Nevada Forest reports that 2,000 Idaho sheep found to have scabies have been clipped. The sheep wintered on the Nevada desert. Estimate is also ma that there are 100,000 scabic sheep in Nevada, mostly in Echo County.

Tags are in order on the Nevada Forest. On the Snake Division all stoc was tagged. This will assist in determining the amount of drift of unpermitted stock, and be a step toward better control.

District 4 - Intermountain District (Cont.)

The Jackson Hole Cattle and Horse Association, which numbers among its members practically every stockman of Jackson's Hole, held its annual meeting recently and unanimously passed a resolution opposing the proposed Yellowstone Park addition. Recognition by the Forest Service was also determined.

W. B. Rice was forced to return to Ogden on account of an attack of influenza. Mr. Rice had gone to the Minidoka to start this season's entry survey work.

Assistant District Forester C. N. Woods has added to his duties in charge of Lands the supervision of the work in Grazing, as a result of the resignation of H. E. Fenn.

J. P. Martin is on the La Sal Forest and expects to put in about ten days examining road projects of the vicinity.

B. E. Richards, in charge of rodent pest extermination for Utah and Nevada, was a recent caller at the District office and informed us that plans are under way to exterminate the rodent colonies on the Fishlake and Fillmore Forests. Later similar work may be undertaken on the La Sal or Sevier.

N. J. Fetherolf is now at the Cottonwood Nursery. First shipments of planting stock were made last week.

Clyde M. Gwinn, formerly Forest Clerk on the Humboldt, has been reinstated as Clerk in the Office of Operation in the District Office.

Forest Inspector C. G. Smith is at Ogden to consider work of Silviculture in this District.

The Boise Forest reports that the predatory animal campaign was a success. The rangers have to their credit 57 coyotes trapped or shot and 162 poisoned. They also trapped 11 eagles, 1 lynx, and 1 fox. Deputy Supervisor Watts has the record for quick work. He captured 4 live coyotes single-handed. The animals were two days old. It is estimated that 40 deer were killed during the winter, not by rangers but by coyotes. Some may have died from natural causes, however. A total of 2,000 deer is estimated to winter on the Boise Forest.

District 5 - California District

Henry Schweichler of Orleans is now held under $1,000 bonds for the Federal Court. The arrest was made by C. V. Brereton in connection with a 1917 incendiary fire on the Klamath.

C. L. Hill has just returned from the annual meeting of the Standardization Committee, Western Forestry and Conservation Association, held in Portland, Oregon, on April 24 and 25. While there he initiated the Oregonians into the mysteries of the "arson" work as carried out in California last year and as planned for this season.

During 1918 the cost of production of lumber in District 5 increased on an average of $7 or $8 per thousand feet, while the average mill run selling prices increased only about $5 or $6 per thousand feet over those of 1917. The increase in cost of production in 1918 is about 33 per cent over the cost of 1917, and is attributed mostly to the high price of labor together with its low quality.

In connection with a recent general advertisement of about 4,800,000 feet of timber in an isolated locality on the Angeles National Forest in District 5 near an active special use area, the following clause is proposed for insertion in the agreement:

"The purchaser agrees that timber cut under this contract after manufacture into lumber shall not be sold at a price in excess of $28 per M. within the territory described as follows: T. 2 N., Rs. 1 W. and 1 and 2 E., S.B.M."

It is felt that this clause will guarantee a fair share of the benefits of the sale to local users and that the maximum price fixed for the lumber will, on the other hand, allow the purchaser to make an ample profit. This is the first time that such a clause will have been inserted in any District 5 timber sale contract, although the use of the procedure in exceptional cases was approved several years ago by the Solicitor and the Forester.

District 5 - California District (Cont.)

The Biological Survey is trying, through Field Agent E. R. Sans, to hire a predatory animal hunter to trap on the Santa Barbara Forest. The pay is $90 a month, the trapper to furnish everything and to keep nothing. He is to turn in the skins and accept no bounties.

The opening gun of the recreation campaign has been fired. The San Francisco News Letter, established in 1856, published in its April 26 number, a five-page article, "The Motorist's Greatest Camping Ground." The illustrations used were reproductions of photographs furnished by the Forest Service. The automobile editor of the paper plans to make an automobile trip to each of the National Forests in the District.

District 6 - Pacific Coast District

Forest Supervisor Hall, of the Santiam Forest, has been appointed field secretary of the Linn County Fish and Game Protective and Propagative Association, which promises to be of great assistance in the protection of the fish and game in the county and also in the stocking of streams of the Santiam Forest. A bird refuge is contemplated in the county also.

J. W. H. Van Lookeren, of Batavia, Java, Dutch East Indies, called at the Portland Office in March. Mr. Van Lookeren, who is a civil engineer, is investigating American logging methods and machinery with the idea of adopting such of them as are suited to conditions in his country. In the District Office he inquired about the Northwest methods and machinery, and the opportunities to visit official operations.

An insect attack on the Tongass Forest in Sitka spruce stands covering an enormous acreage will receive attention from the Bureau of Entomology and the Forest Service this spring. The damage is being done by a caterpillar very similar to the destructive bud-worm of the spruce stands of the East. Private stands of Sitka spruce in Oregon and Washington, particularly in the lower Columbia River Basin, suffered during the past year from aphid attacks. These depredations have not resulted in the death of much timber as yet. This problem will also receive attention this field season.

A total of 1,076,000 trees were planted on 1,537 acres on the Crater, Oregon, Santiam, Siuslaw, and Wenatchee Forests, a ccording to the 1918 planting report recently completed by Mr. Kümmel. This is the largest area planted since 1915. The Santiam leads, with the largest area of any single Forest, 489 acres.

In keeping with the established policy, the bulk of the area is located on west side Forests and in the Douglas fir regions. Approximately fifty per cent of the trees used were Douglas fir and forty-six per cent western white pine.

The season as a whole was fairly favorable for the plantations, except for a pronounced dry spell in late spring, during the critical period when the trees are getting established. Because of this, rather heavy mortality occurred on the Santiam and Wenatchee Forests, but on the remainder a survival of from eighty-three to eighty-five per cent at the end of the season was obtained. As time goes on it becomes increasingly evident that the outcome of each year's planting depends greatly upon weather conditions during the first season. If the summer is particularly dry, as in 1917, mortality is apt to be very heavy, while moist seasons such as occurred in 1915 and 1916 are favorable for good survival. Other factors of course--such as character of site, workmanship, quality of stock, etc., are contributory, but under average conditions the character of the weather during the first season seems to be the most influential.

The west side spruce project (Olympic) is nearing completion and the maps are now available in the Timber Survey folder.

This project was started May 8, 1918, and the entire District Office timber survey force, together with eleven temporary assistants, worked in the field until September and October under the direction of Forest Examiner F. J. Hanzlik. The office work has been handled by Forest Examiner C. J. Conover on account of Mr. Hanzlik's furlough for the teaching of forestry to returned Canadian soldiers. Forest Examiner Bright and Forest Ranger Hult did the detailed work upon the watersheds in which each had charge.

District 6 - Pacific Coast District (Cont.)

The Humptulips, Quinault, Queets, Hoh, Calawah, and Soleduck watersheds were covered wherever there was a possibility of good quality spruce, generally all public land below about one thousand feet elevation being cruised. The results are as follows:

Species	Per cent	Million B. F.
Spruce	21	397
Douglas fir	25	483
Cedar	9	169
Hemlock	37	708
Silver fir	7	129
Miscellaneous	1	6
	100	1,892

Douglas fir and spruce were cruised by log grades, and the following results obtained:

Species	Grade	
	No. 1	No. 2
Spruce	5%	8%
Douglas fir	32%	23%

Generally the better grades occur at the southern end of the project.

The area has received a good start toward accessibility by the extension of railroads into the north and south ends by the Spruce Production Corporation.

A land classification statistical summary for the Wenatchee, prepared by Ranger H. C. Blankenship, shows that out of 21,918 acres of homestead patents, 2,080 acres are producing agricultural crops. Of a total of 150 homestead patents, 50 are occupied by original entrymen, 44 by others, and 56 unoccupied. Of the 27 June 11 claims patented, 20 are occupied by the original entrymen, and 7 are unoccupied. Of the pending June 11 claims, 14 are occupied and 12 unoccupied. The average acreage of June 11 claims is 77 acres. The average acreage under cultivation is slightly more than 20 acres per claim. While less than ten per cent of the land in the original homestead entries is under cultivation, nearly thirty per cent of the June 11 claims is being cultivated.

The logged-off areas within and near the Wenatchee Forest where brush and refuse have not been piled and burned and now remain a fire menace are being mapped. This map will be supplemented by a written report. When the work is completed it is proposed to have the matter taken up with the State Forester, in the hope that he will prevail upon the owners of such lands to properly dispose of the refuse.

District 7 - Eastern Forest

The Wichita National Forest now possesses a tractor engine purchased from the road fund which is given to the county from the proceeds of the Forest. Forest Supervisor Rush states that this is a great addition to the road machinery and will save lots of hard work which would fall to the horses of Forest officers, in the way of plowing, grading, and dragging the roads.

A timber reconnaissance has just been completed on the Lost River watershed, Shenandoah Forest, on a tract of about 4,000 acres. This reconnaissance is in anticipation of the demands of a tanning company which has located a tannery at Lost City, W. Va., and purchased about 1,100 tons of bark this spring. It is estimated that there is sufficient bark on the Forest to keep the tannery going for four years at a normal use of 2,000 tons per annum. With the small addition of privately owned bark and substitutes, in the form of nuts and extract, the supply may hold out considerably longer. Forest Examiner S. H. Thompson, in charge of the Acquisition work on this group of Forests, was detailed to have charge of this project.

A majority cattle association of stockmen and farmers--users of the range on what is now the Shenandoah National Forest--was formed in 1916 for the purpose of cooperating with the Forest Service in the handling of range problems. The association includes in its membership certain progressive stockmen who have been attempting for some time past to improve their cattle and secure a better grade of stock. These men have conceived the idea of using the association as a means to these ends and have quietly agitated the matter of making an assessment on users of the particular ranges in which it operated for the purchase of pure-bred bulls. Assistant Forester Barnes, in Charge of Grazing in the Washington Office, was asked to come to the Forest to explain the methods used and the results obtained by similar organizations in some of the western Districts. As a result the assessment is being collected, not, however, without opposition. The association is in the market for ten pure-bred bulls, to take the place of the scrubs. Some of the malcontent users of the ranges affected by the assessment decided to move their stock to a Forest range which was not controlled by the ruling of the association, but after making the necessary arrangements they learned that the herder on this range had raised his herding fee so that it will cost them as much as the assessment in the long run, and they will not secure the advantages of the pure-bred bulls. Others, to avoid the assessment, attempted to secure grazing in West Virginia, but it was found that in several cases individuals owning grazing lands had decided to replace their scrub bulls with pure-bred animals and raisd the grazing fee to cover the additional cost, after reading the accounts of the action of the Shenandoah Stockmen's Association in the local papers. It appears, therefore, that the action of this association may eventually be quite far-reaching in its consequences.

WEEKLY BULLETIN

Forest Service - Washington Office

(Not for publication)

May 19, 1919.

Administrative Handling of Road Work

The object of the road work on the National Forests is to provide a road system that will satisfactorily serve for utilizing and developing their resources, for community development, and for local and through travel. The initial steps are to determine what roads or projects should be included in such a system, which projects need improvement, the construction or repair work necessary to maintain the requisite standard, and to estimate the cost of this work. Certain projects are selected for construction, and as funds become available definite arrangements are made for the necessary improvement work. Finally, there is a record of the amount of work which has been accomplished and the cost.

All necessary and available data relative to each existing or proposed road are collected and arranged in accordance with the standard outline for administrative project reports. Selection is made from the total number of projects and roads suggested by the Forest Supervisors and State and County officials and believed necessary for a comprehensive road system, including the roads and trails considered necessary to be provided within ten years for the proper service of the residents within the Forests and for the complete utilization of National Forest and other resources of the region.

The State and Forest base maps record in graphic form the results of this study, classifying the function, type, and status of construction of the necessary roads and trails, and showing all trunk highways and the laterals within the Forest boundaries. Designation is made by number of those projects upon which construction or improvement work is believed necessary, and of projects which have been approved for the use of Federal funds. This information is also given in tabulated form in the Comprehensive Road System Report, except in cases where the necessary work has been finished. Brief data relative to length and cost to complete are also given in this report, more complete data being given for these projects on the Administrative Project Reports. The Comprehensive Road System Report therefore represents the work that remains to be done and the amount of money required.

When it is decided that a project is worthy of the use of Federal funds and determination has been made of the proper percentage of cooperation and the total amount of Federal liability, the Secretary's authorization is obtained for entering into negotiations for cooperative agreements, such authorized negotiations being entered on a table of Approved Projects.

Each year a Working Plan is prepared which shows the work already done on each project listed, the expenditure, status, and the work planned for the current calendar year and the next three years approximately, also the amount of proposed expenditure and the funds and fiscal years of appropriation from which the necessary amounts are to be obtained.

The Annual Cumulative and Maintenance Report is the final record of accomplished work, indicating the name and location of each project, the mileage and other engineering data, the allotments, and the expenditures respectively.

The allotment and accounting system is in thorough accord with the other portions of the system. In the matter of filing reports there is an atlas folio for each State, including State and Forest base maps and reference list; Comprehensive Road System Report; List of Section 8 Applications; List of Approved Projects; Annual Working Plan; Data of Cost, etc., on Miscellaneous Small Projects; Annual Cumulative Reports for Construction and Maintenance; Tabulation showing Forest and County Areas, value of resources and allowable expenditures of Section 8 money.

In the correspondence file for each project are placed the Administrative Project Report, Reconnaissance or Preliminary Investigation Report, Monthly Progress Report and Miscellaneous Reports on the Project.

The District atlas folio holds the tabulation showing apportionment of Section 8 money, the tabulation containing the summary of work during each calendar year, and the summary of administrative work during the fiscal year.

T. W. NORCROSS.

More Airplane Patrols for National Forests

Two additional routes in the patrol of National Forests by Army airplanes, to give early warnings of fires in the forests, have been arranged by the War Department and the Forest Service. The routes will be operated from Mather Field, near Sacramento, beginning June 1, the same day as two routes to be opetatdd from March Field near Riverside, Calif.

The first route from Mather Field will cover the northern Eldorado and Tahoe Forests on the valley side of the Sierras. It will start from Mather Field and proceed to Placerville, Colfax, Nevada City, Strawberry Valley, and Oroville, where the planes will land at a field now available. This route will be covered in the morning of each day and return trips will be made in the afternoon.

The second route from Mather Field will cover the southern Eldorado and Stanislaus Forests. Starting from Mather Field the route goes to Placerville, Grizzly Flat, Big Trees, and to a landing near Sonora or Tuolumne. This route will be covered in the morning and return trips will be made in the afternoon. Both of the Mather Field routes have a round-trip length of about 150 miles.

Forest Service reports tell of a successful trial patrol undertaken recently. No difficulty was experienced in detecting fires in heavy timber at elevations of 6,000 to 10,000 feet.

Wireless Telephones To Be Tried Out in National Forests

In many sections of the National Forests it has been found impossible without great expense to maintain telephone wires or cables because of the havoc wrought by timber falling across the wires and by heavy snowslides. Therefore wireless telephones are soon to be given a trial in the Forests, and the Signal Corps of the Army has lent four combination sets of transmitting and receiving apparatus to the Forest Service.

Equipment is to be installed on Mt. Hood, at an elevation of about 13,000 feet, and another set is to be at the nearest forest ranger station, about 12 miles away. Two other sets are to be placed in the Clearwater Forest region of Idaho, which is heavy wilderness country.

Wireless telephones have never been tried in mountainous country, and interest centers in the results of the experiments, particularly in the effect on messages of high ridges between telephone stations. The Mt. Hood experiment will show the practicability of talking from a high point to a low point, and the Clearwater Forest experiment will demonstrate whether messages can be communicated from two points of about the same elevation but separated by mountains.

Minnesota a Prey to Repeated Forest Fires

The extensive forest fires in Minnesota last fall recalled previous disastrous fires in the State.

The first series of recent large fires occurred at Virginia in 1893, at which time the town was practically destroyed. Next was the Hinckley fire in 1894, in which 418 people lost their lives. In 1908 the village of Chisholm was destroyed. There was no direct loss of life, although subsequently several women and children died from exposure. On October 7, 1910, fire wiped out the towns of Beaudette and Spooner and devastated the surrounding country with a large loss of property and the sacrifice of 32 lives. The most recent fire was that of October 11 and 12, 1918, which burned over an area of 350,000 acres, wiped out the towns of Cloquet and Moose Lake, and caused a property loss of over $50,000,000 and the death of over five hundred people.

Census of Game Killed

The increased number of hunters in all parts of the State of New York has year by year increased the difficulty of maintaining sufficient game, and has made it necessary to obtain the most accurate data regarding game conditions. It has been realized for several years that one of the most important details to be ascertained is that concerning the amount of game actually killed. With this information in hand it will be possible to know whether a game species is going up or down. To accomplish this the Conservation Commission has printed on the back of each hunting license for the year 1919 a form upon which every applicant for a license is required to state the number of birds and quadrupeds that he killed under his 1918 license, giving the information to the best of his recollection. All of this information will then be returned to the Commission with the license stub at the end of the year.

The Commission has already received requests from other states for full details regarding this system and understands that it will shortly be adopted in a number of states. Such a plan would be entirely applicable in all of the National Forest states. It would not only serve to give the State Administration accurate data of game conditions, but would create a growing realization upon the part of those enjoying the hunting of their responsibility to assist and back the Governmental administration in culture and protection. There is a need of local game protection organizations with live issues to keep them active. Forest officers should work with such local organizations as now exist and work for them when they do not exist. The number of birds and animals killed or fish taken is only a small portion of the information gleaned by sportsmen that can be of value to the administrative officers. Where were the animals taken, what was the shelter and the feed, were they young or old, male or female, and in what condition? A journal for such an association should be of immense value either through the individual member or the association, and should serve to crystallize the individual member's responsibilities in everything relating to the game he comes in contact with.

SMITH RILEY.

Stream Pollution by Wood Refuse from Paper Mills

With the idea of preventing stream pollution, the Wisconsin Division of Wild Life Conservation is recommending to the paper corporations of the State measures for the removal of woody matter from the waste discharge of paper and pulp mills. The means of control suggested is described as a screen with eighty-mesh wire, discharging into a wooden box provided with perforated flooring on the top of which are placed two layers of rope netting.

The same source of information promises a future recommendation for taking care of mineral sludge and blow liquors, the plans for which are not yet complete.

(Information taken from "Paper" for May 14, 1919.)

Indians Cooperate in Restocking Streams

Ranger Carroll R. Dwire, of the Carson National Forest, New Mexico, recently completed arrangements with the Taos Pueblo Indians whereby they will bear the expense of transporting trout fry from the railroad to the head of Pueblo Canyon, a distance of about sixty miles. So far as known, this is the first instance of such cooperation between the Forest Service and any Indian tribe. In order to reach an agreement, a full Council meeting was held, presided over by the Governor of the Pueblo.

The Taos Indians occupy a peculiar relation to the Forest Service. They have lived for many centuries on Pueblo Creek, of which the main watershed lies within what is now the Carson Forest. For centuries the Indians have depended on this watershed for fish, game, water, wood, and, since the advent of the white man and domestic animals, for forage. They have a "Preference" to the use of the Pueblo watershed that antedates the preference of the oldest white settler by about two centuries. This preference the Service recognizes by granting the Indians a monopoly on Pueblo Canyon to the exclusion of the white man. Moreover, the Indians do not want the whites even to travel up the canyon, for fear of the fires that the pale-faces strew about.

Is there, in America, an older example of forestry (crude though it may be) than that on Pueblo Canyon? For the Indians have practiced a crude selection system that has supplied the entire tribe with fuel and vegas for many generations without any reduction in the yield either by overcutting or by fire.

A Practical Arbor Day Idea

(**Editorial Note:** The following **is the** message of the Massachusetts **Forestry Association on** "The Practical Side of **Arbor Day**.")

Arbor Day has become an established institution. Its educational possibilities are very important. A couple of hours spent in planting trees under practical and competent guidance will do the pupil more good than many lessons in nature study in the class room. The boys and girls should be taught how to plant trees and shrubs, and also the value of such planting, apart from the sentiment which has usually been attached to Arbor Day celebrations.

Many states are in great need of timber trees for the future, and are already bringing in from other states and Canada much of the timber used. This is not preparedness. We are allowing much of our land to grow up into the wild-land class, that brings little or nothing to the towns or states in taxes. This condition is anything but a credit to the State, and everybody--the town officer in particular--should use his influence to restore to these lands timber-producing trees.

How can the school children help in this matter and at the same time be benefited by it?

The difficulty has been that not enough stress has been placed on the practical side. It does not benefit the children greatly to watch some one plant a tree; they must do it themselves. They can plant little trees successfully. This has been proved in various towns and cities in this country, and in parts of Europe it is the accepted policy for the schools.

Some of the difficulties can be foreseen. In the first place, there must be some accessible land available, which is fitted for tree planting. By that is meant land which is suited only for timber growth and this can usually be found.

1. On the town farm, the park, or other land owned by the town.
2. On private property, where the owner will be willing to pay for the trees
3. On land which individuals may donate to the town for a town forest. A little effort on the part of the selectmen and the Tree Warden will discover the land.

The next problem is to secure the trees and the tools. The Tree Warden will usually already have the necessary tools, or can borrow them from another department. The trees can be purchased from the funds of the Tree Warden or the School Board and they can be obtained either from a private nursery or the State Forestry Department. If the planting is to be done on private land, the owner will certainly be willing to buy the trees.

A schedule of hours can be worked out by which one teacher will take her pupils to the place where the planting is to be done and the Tree Warden or his assistant will show them how to plant the trees and direct the work. In an hour or two, according to the time allotted, each pupil would have learned how to plant the little trees and will have planted several. The next teacher will follow with her pupils. It may take two or more days to complete the schedule, which will give all the pupils in a large school a chance to learn how to plant trees.

It has been estimated that to meet the demand for timber in Massachusetts alone 20,000 acres of mature timber should be ready to cut annually. In order to meet future needs, at least, that area should be planted to trees each year. If each of the school children in Massachusetts were to plant a few trees on Arbor Day each year, half or more of this necessary planting would be done by them.

It is hoped that every town in the country will eventually possess a forest similar to those of the towns and cities of Europe. When the European countries found that their timber supply was running short, the cities and towns purchased land and began to plant forests, and have avoided a wood famine. We, in this country, are rapidly approaching that condition and must begin to plant if future generations are to have wood.

Private Forestry in South Carolina

W. R. Mattoon spent last week in South Carolina on work connected with the application of private forestry.

The trustees of the Penn Normal Industrial and Agricultural School located at St. Helena Island, South Carolina, have an option on a tract of 100 acres of timberland. Mr. Mattoon was called in to estimate and place a valuation on the timber. It is planned to use the tract to supply cordwood for the school and to make it a school demonstration forest.

Private Forestry in South Carolina (Cont.)

At Wellington, S. C., Mr. Mattoon inspected some logging operations under way on land owned by the Dr. John de la Howe Industrial School. It appears that the cutting was not done in accordance with the original recommendations made by Mr. Mattoon. The trustees had done it alone after getting the original suggestions. Fortunately, they called for help again before they had done too great damage.

Trees to Anchor Michigan Sand Dunes

The Christian Science Monitor is authority for the statement that more th 73,500 tree seedlings will be sent to Ottawa, Muskegon, and Newago counties, Michigan, to be planted on the sand dunes to determine the feasibility of this procedure for checking the shifting sands. The trees will be shipped by the department of forestry of the Michigan Agricultural College and experts will direct the plan ing. White pine, spruce, jack pine, white ash, and silver maples will be planted in the dunes.

New Jersey Buys Link Between Detached State Forests

The recent purchase of fourteen hundred acres of timberland in Woodland Township, Burlington County, N. J., by the Department of Conservation and Development, combines several detached State-owned areas into a compact unit capable of more efficient management.

The six State forests of New Jersey, each under the charge of a resident forest ranger, are protected and administered for the production and sale of timber and the study of technical forestry. Roads, trails, and camp sites are developed for the use of the public, and these State forests demonstrate to private owners how their own woodlands should be managed. Such general practice, it is gued, will ultimately bring New Jersey's 2,000,000 acres of woodland to a maximu of productiveness.

A Cue from Canada

Canada has just passed a new law for the control of the public grazing lands. It has two very important features:

1. A considerable proportion of the grazing fees is annually made availab for range improvements to be built and owned by the Government.
2. If the Government runs short of range improvement money, provision is made for the remission of up to one-third of the grazing fees to grazers who wil finance needed improvements, the improvements, of course, becoming the property the Government.

(Material taken from Daily Bulletin, Southwestern District.)

Colonial Timber for France

(This information is taken from an article by Paul Descombes, published i La Revue de Paris, and reviewed by the American Review of Reviews for May, 1919.

The French forests, even in peace times, yielded less than one-half of th timber consumed by the industries of the country. In the present crisis, therefore, France is confronted by a dual problem--the doubling of its permanent production of timber, and an annual supplement of six million cubic meters for the next five years.

It is proposed that a considerable part of the increase in importations should come from the French colonies, thus utilizing their resources and enhancing their value. Although colonial lumber has hitherto been imported in but sma quantities, generally of rare species, Frenchmen of foresight have turned their

Colonial Timber for France (Cont.)

attention to the development of the industry. Even before the war, the Minister for the Colonies had organized several forestry missions, the Paris Society of Commercial Geography published a study of forest preservation, and during the war the Government sent out a mission to Africa. This mission has carefully studied all the details of the steps necessary to familiarize the commercial world with the colonial lumber products found available, and certain phases of the organization are recommended for immediate practice. The first step to be considered is the establishment in every colony of a forestry service to direct and control exploitation and guard against the excessive measures which ruined so many French forests at the beginning of the war before the establishment of the military forestry service.

The French colonies are estimated to possess over a billion cubic meters of timber, so that an annual cutting of ten million cubic meters, if accompanied by adequate reforestation and protection, will maintain the proper balance of conservation and utilization for centuries to come.

Furthermore, the greatly increased utilization of French colonial timber, which is necessary to tide over the present critical period, will not react when the forests of the mother country have recovered their normal productivity, since industrial progress is always accompanied by an increase of timber consumption.

Washington Notes

D. D. Bronson, Forest Inspector, has returned to the Washington Office from a field trip which covered all the western Districts.

District Forester Coert DuBois, of the San Francisco Office, is in Washington on a temporary assignment.

R. B. Adams, Telephone Engineer, District 1, is in Washington in connection with the requisition of four sets of radio telephones for field use.

With deep regret announcement is made of the death of Miss Ethel T. Hoffman, Clerk in the Office of Grazing, on May 15. Miss Hoffman has been one of the regular force of the Washington Office for over twelve years, almost the entire time in the Office in whose service she ended her career of loyalty and good work.

Victory in the Victory Loan

The Forest Service is winner of one of the five German helmets allotted to the Department of Agriculture, being the fifth bureau of the Department in the order of per capita subscription. The total amount subscribed in the Washington Office to the Fifth Loan was $30,200, with a per capita of $119.31.

Laboratory Notes

Capt. William L. Symons, of the Patents Section, Bureau of Aircraft Production, Washington, will spend a few days at the laboratory in the near future to discuss patents and inventions of members of the laboratory.

The Victory Loan subscription of the laboratory amounted to $21,150 by two hundred and three subscribers.

James O. Bixby has accepted an offer of a new position and expects to leave the laboratory very soon. Mr. Bixby has been a faithful and efficient employee of the laboratory for twelve years.

C. R. Thomas has resigned from the laboratory, and has left to take up his new work. Since last fall Mr. Thomas has been in charge of the section of review, and has done valuable work in preparing results for publication and distribution. Mr. Thelen has taken over his duties.

Representatives of three of the large electric companies are at the box laboratory making tests on new methods of packing incandescent lamps. They expect while here to get information relative to comparative values of new packing methods that would take six months and a large expenditure of money to gain through ordinary shipping channels.

Laboratory Notes (Cont.)

C. P. Callister, Department of Defense, Commonwealth of Australia, is spending several days at the laboratory. He is interested in kiln drying, wood distillation, and strength tests of wood. The major portion of his time, however, will be spent on kiln drying. Mr. Callister is returning to Australia after having spent the last four years in England on high explosive work.

A new method of constructing blanks for artificial limbs is now being tried out at the laboratory and it promises to be of value to the industry. Ordinarily thigh sockets require huge blocks of willow which are exceedingly difficult to dry without checking, even though they are carefully air dried for a number of years. It is estimated that the loss of such material in air seasoning ranges from 30 to 50 per cent. The loss in the process of splitting the blocks and carving is also considerable. The proposed method of constructing blanks makes use of small pieces of willow which are more plentiful and are easier to dry without injury than large blocks. There are two types of thigh sockets which have been suggested:--one formed of four and the other of six pieces of wood glued with water-resistant casein glue. Butt joints are used in the four piece socket and serrated in the six piece one. Practically no wood is wasted in the manufacture of these sockets.

District 1 - Northern District

Thus early in the game the fire season has opened with three fires to date--two on the Flathead, and one on the Lolo. Of the Flathead fires, one, started by brush burning near Coram, Montana, burned 140 acres, and the second was a small fire which started on the railroad right of way. The fire at Deep Creek, on the Lolo, extended over 160 acres and was fought by five men and a cook--and rain. It is thought that the rain was the most potent factor in its extinction. Brush burning was the cause in this case also.

The Commissioner of Public Works of Idaho has signed cooperative agreements for the location surveys of the Lolo Pass and Lookout Pass road projects.

Pierce and Clearwater Highway Districts have signed a cooperative agreement for the survey and construction of a road extending from Greer to the Bungalow. It will be 50 miles long, and cost approximately $250,000. Cooperation will be practically on a 50-50 basis.

H. A. Calkins has returned from an inspection trip with Than Wilkerson of the reconstruction work to be undertaken on the Bitterroot-Big Hole Road. Ranger Wilkerson will have charge of this work and will spend about $8,000, half of which will be contributed by Ravalli and Beaverhead Counties.

Surveyor Ketcham has been detailed to handle the construction of the Addie-Copeland Road.

Chief Engineer Merrill and T. S. Brock of the office of Engineering of Washington, spent a week in the District Office recently.

J. C. DeCamp, late with the 20th in France, is now at Camp Upton, Long Island, and states that he will be free to return to the Service by June 1, if his presence should be required so soon. Mr. DeCamp will visit his family in Michigan on the way out.

Supervisor Willson of the Madison, will resign on May 31. Mr. Willson has been a number of years in the Service, having been appointed as Forest Guard in District 3 in 1905. In 1906 he was made Assistant Ranger, and promoted to Forest Ranger in 1907. He has been a Supervisor since 1908.

Two other regisnations are announced. Harry P. Howes, Ranger on the Pend Oreille, left the Service on April 30, to go into the wholesale hardware business in Great Falls, Montana. A. H. Lynn, Forest Ranger on the Flathead, resigned April 19. His new work is carpentry.

C. A. Skeels is back on duty in "DA," as is S. E. Schoonover, lately recovered from smallpox.

Joan Ewen leaves today for the Kaniksu, where he will build a bridge across the West Branch of Priest River, on the road from Priest River to Priest Lake. There will be a change made in the present road.

Dr. O. F. Hawley, in charge of the Section of Derived Products, Forest Products Laboratory, was a recent visitor to the District Office.

District 1 - Northern District (Cont.)

Dr. Parker of the Montana State Board of Health and Mr. Roosevelt of the Biological Survey were here on Saturday, conferring with the District Forester in relation to Service cooperation in the squirrel and gopher eradication campaign.

Mr. W. R. Schofield, recently returned airplane pilot, with 13 months' experience in France, spent several days in the District office last week. He has been assigned to grazing reconnaissance work on the Beaverhead.

F. K. Stewart, who served recently in France, paid a flying visit to the Missoula office on his way to the Helena, where he will be on timber survey work.

Supervisor McLaughlin of the Blackfoot was in on Friday to talk over the pulp sale on his Forest, and Supervisor Warner paid us a visit on Saturday.

G. H. Lautz returned Wednesday night from Boise, Idaho, where he was in conference with Chief Engineer Merrill and the State Highway Commission of Idaho, and left on Saturday for Orofino, Idaho, to discuss the Clearwater road projects with the Supervisor of that Forest.

E. F. White leaves today for the Savenac Nursery and will proceed from there to Wallace, Idaho, W. M. Nagel, one of Mr. White's assistants, has already preceded him to Haugan to inspect the work of planting 300,000 trees in the Lolo Forest, between Haugan and Saltese. The planting job on the Lolo will take about four weeks.

J. W. Girard and Supervisor White of the Bitterroot, plan to leave Missoula for the Kootenai between May 1 and 5. The purpose of this trip is to mark timber on the Baird and Harper Lumber Company sale on Cripple Horse Creek, and draw up marking rules for yellow pine.

A. U. Stanley, Forest Ranger on the Custer, will resign May 7, to go into the stock business.

A letter has been received by the District Forester from Jack Williams, formerly of the Absaroka Forest, and later of the 665th Aero Squadron who, according to his expression, was "interned" in England for the duration of the war. He is now back at Reedpoint, Montana, and breathes a prayer of thankfulness that he did not sell his horses and outfit upon enlisting, and that he has found them unharmed upon his return. Mr. Williams came over from England on the Mauretania, which he says "raced against two other boats with two days start to be the first boat back after the armistice was signed. We faced a 40 to 60 mile gale most of the way, and won the race in 6 days from Liverpool to N. Y."

District 2 - Rocky Mountain District

Assistant Forester Will C. Barnes and Assistant District Forester Hatton have gone to Delta, Colorado, to attend the annual meeting of the Delta Livestock Association. Mr. Barnes will also visit the Gunnison National Forest to take up special grazing problems with the Supervisor, and will make a trip to the lambing grounds on the Cochetopa Forest.

Range reconnaissance work will be started on the Gunnison National Forest May 16. Great difficulty has been experienced in securing qualified men for this job. Two assistants were finally obtained from the State College of Forestry, Syracuse, New York. Both of these men intend making forestry their life work, and have accepted this distant assignment in order to gain actual field experience.

M. W. Thompson, in charge of silviculture, recently returned from an extensive field trip on the Michigan National Forest.

An improvement crew is building a telephone line from Nenzel, Nebraska, to the Morton Nursery. District Telephone Engineer Kylie is superintending the job.

The District Office recently purchased a motor truck for use in land classification work. It has been sent out with a crew headed for Southwestern Colorado.

Planting plans for the Minnesota National Forest hereafter will call for the afforestation of 1,000 acres per year. The State has also agreed to plant not less than 4,500 acres yearly.

District 3 - Southwestern District

A "let-'em-burn" movement was started in fire-protection several years ago. This is the policy of putting small crews on fires that are not threatening serious damage, rather than corralling them in a short time with a large crew. This practice seems doomed to go the same route that "light burning" went. California shows during the past eight years that there has been a steady rise in the total acreage of fires, the average size of Class C fires, the average cost of C fires, the total cost of C fires, the percentage of C fires to the total fires, and the average cost of fires, all of which may in part, at least, be ascribed to the "let-'em-burn" policy. In the long run, the cheapest policy seems to be to catch every fire when it is small. Several years ago the "let-'em-burn" theory was adopted in this District, but as a general rule was not carried out. Apparently it is just as well that it wasn't.

T. S. Brock, administrative assistant from the Washington Office of Maps and Surveys, is making a visit to this District for the purpose of going over plans for topographic surveys, the personnel situation in the Office of Drafting, and the preparation of a program for mapping during the ensuing year.

The total amount subscribed by members of the District Office to the Victory Liberty Loan was $4,400.

The Secretary has signed the cooperative agreement for the survey and construction of the Snowflake-Pinetop Road on the Sitgreaves Forest. The total amount of money involved is $152,000. Of this amount Navajo County puts up $60,000 and the Federal Government the balance.

Dr. Marsh's bulletin, "Oak-Leaf Poisoning of Domestic Animals," Department Bulletin 769, is now ready for distribution. The general results of investigation on the Lincoln National Forest seem to point to three plants in this region as the cause of the poisoning of a large number of cattle: Oak, Baccharis (Yerba de Pasmo), and Asclepeas verticillata (whorled milkweed).

Dr. Marsh attributes the loss among sheep on the Datil National Forest to snakeweed (Gutierrezia) on the heavily stocked ranges, as well as to the three loco plants: Astragalus bigelovii, A. diphysus, and Oxytropis Lamberti.

It is requested that Supervisors collect species of Gutierrezia as soon as these plants begin flowering, (reference "Suggestions for the Collection of Range Plant Specimens on National Forests" by Henry S. Graves, of July, 1914), and forward to the District Office.

State Game Wardens in the Southwest come and go after the manner of the kaleidoscope, and as often as they are changed field men are enraged with the need of taking out new commissions. This matter has been given very earnest thought in an attempt to secure relief. Legal opinion is that a Forest officer who has not a legal commission, i. e., a commission issued by a duly appointed State Game Warden, and fortified by a legal oath of office (which is demanded by the State laws of both Arizona and New Mexico) has no protection against prosecution for false arrest. Acting on this advice, a strenuous effort was made in New Mexico during the recent revision of the game laws to secure legislation making all Forest officers in the State ex-officio game wardens. The State Warden, however, was of the opinion that he should personally appoint all his deputies, and the provision was killed. There is nothing to do but accept the decision and execute the commissions. We believe that every Forest officer of the two states will be willing to go to the trouble and expense of securing these commissions for the opportunity it gives in the forwarding of work that has more than a merely local significance. Very few commissions have come in. As the fishing season opens soon, can they not be hastened?

On May 3 the Acting Secretary approved the intensive classification of the Williams Division of the Tusayan National Forest. The classification of this Forest Division is now completed.

Telephone Engineer Allen of District 6 is now in this District and is at present on the Santa Fe Forest. His services have been very kindly loaned to this District for a month, and he will visit several other Forests during May.

Construction work on the Glorieta-Panchuela road was commenced by the Bureau of Public Roads on April 24. Mr. F. H. Flint, Highway Engineer, is in charge of the work. Station contracts and force account methods will be used in pushing this work to early completion.

When the war broke out this District was negotiating with the railroads for a campaign of advertising the recreation features of the Southwestern Forests. Now negotiations are under way between the Secretary of Agriculture and the Director General of Railroads to inaugurate a campaign to increase travel to all the National Forests.

Seventy-five new iron cots, purchased from the War Department, are on their way to District 3, for use in fire-guard and timber-sale cabins. We expect to get 50 more, which will complete the furnishing of every such cabin in the District. This makes another considerable step forward in the important business of providing suitable living quarters for field men.

The cooperative agreement for the survey and construction of the Salt River-Pleasant Valley Road from Salt River to Carr's Ranch was approved by the Secretary on May 3. On the same date he approved the cooperative agreement for the construction of the Salt River Bridge near the old diversion dam. The amount of money involved in these two projects is $123,000.

District 4 - Intermountain District (

Elmer C. Ross is on the Boise Forest making investigations of the proposed projects on that Forest to be built from the emergency funds. After completing his assignment on this Forest he will be available for other Forests.

A. B. Apperson, formerly General Superintendent of the D. & R. G. Railroad, called at this office today and made inquiries concerning the purchase of tie prop and saw timber on the head of the Provo River. The estimate of this timber is about 100 million feet. An order for ties has been secured from the D. & R. G. Railroad and a sale may be consummated this summer.

The Bonneville County Good Roads Association held a meeting at Idaho Falls on Monday, March 31st. The association includes the counties in the eastern part of the State. Discussion was in connection with the road between the Utah State Line and Yellowstone Park, of which the Warm River-Yellowstone Project is a portion. The representatives present were very much interested in the plans for completing the Forest project.

The number of recognized livestock associations in District 4 has reached a total of two hundred. With one exception, every forest has one or more. The Manti leads with fifteen, closely seconded by the Cache and Fishlake with fourteen each. Nine forests have ten or more.

District 5 - California District

The stimulating effect of roads on regional development is now being demonstrated on the Lower Trinity River. Supervisor Jotter, of the Trinity Forest, reports that on his last trip to that region he was amazed at the progress that had been made in clearing land for agricultural crops. New orchards are being planted, alfalfa fields seeded, and houses and barns built. A small local cannery is also being erected and four small portable sawmills have recently been put out. The region in which this development is going on is one in which the Service has already built twelve miles of road and in which the State, through cooperation with County and Federal authorities, is about to construct other roads which will permit all-year-round travel on easy grades to the Coast.

A tentative allotment of Weeks Law money has been received for California, and arrangements are now being made with the Forester by which it is hoped to place four additional patrolmen on timberlands outside the Forest. Tentative arrangements will call for two of the patrolmen to be placed by the Forest Service and two by the State Forester. Salaries and a small amount of money for fire-fighting purposes are to be provided by the Weeks Law fund, and travel expenses and transportation from State funds. If this agreement can be perfected it will provide considerable additional protection to the northern end of the State. Supervision of the men is to be by the State Forester.

On April 23 the Acting Secretary executed the cooperative agreement with the Board of County Commissioners of Tuolumne County, California, covering the survey, construction and maintenance of the Sonora-Longbarn project, properly within the Stanislaus Forest. An allotment of $22,000 from the Section 8 Fund, fiscal year 1919, has been made available to this project.

District 5 - California District (Cont.)

Arrangements have just been completed with Colonel Watson, commanding officer, Mather Field, for two daily airplane patrol routes, one covering portions of the Eldorado and Tahoe, the other portions of the Eldorado and Stanislaus. It is probable that the Curtis J. N. 4 H plane will be used. Each route will be covered twice daily, once in the morning, and once in the afternoon, and the service will begin June 1. R. F. Hammatt took an initial flight with Col. Watson from Mather Field to a point approximately ten miles north of Placerville on Tuesday, May 6. The elevation reached was approximately 8,700 feet. As a result of this flight, there seems to be no doubt of the ability to see small smokes very readily. Seven distinct fires were recognized on this trip.

Interesting data concerning the effect of a heavy drift of cattle on sheep allotments were obtained by Grazing Examiner Douthitt on the Modoc last summer. The figures which follow show that a heavy drift of cattle within sheep allotments consumes at least one-half of the total amount of available palatable vegetation. The vegetation on the areas grazed in the study consisted of grass, weeds, and browse in open grassland, open weed, sagebrush, browse, conifer timber, and aspen grazing types. Practically all the vegetation is grazed by both sheep and cattle, although more uniform and complete utilization is obtained with sheep. The results of the study indicate that on such ranges provision must be made for the forage consumed by the heavy drift of cattle, preferably by a definite provision for a certain number of cattle or at least by using twice as many forage acres per sheep as are necessary on allotments where the cattle drift is slight.

Slight Drift of Cattle (Forage acres per ewe per day)	
1 ---	.00765
2 ---	.00865
3 ---	.00835
4 ---	.00827
Average	.00828

Heavy Drift of Cattle (Forage acres per ewe per day)	
1 ---	.0143
2 ---	.022
3 ---	.0159
4 ---	.0152
5 ---	.0187
6 ---	.0147
Average	.0168

Enameled metal signs have been adopted as standard for all primary Fores signs in the District. Either 1, 1¼, or 1½ inch letters, or combinations of the sizes, will be used. The present standard colors of white background with green letters is continued for all except the fire signs now being manufactured by the California State Autumobile Association.

"If I get back alive from my detail to the F.A.C.," says Supervisor Tillotson, "I expect at once to engage in the less dangerous work of flying around Cleveland country locating practice fires, platting landing places, etc., since Colonel Carberry, commanding officer at Rockwell Field has agreed to install ai plane patrol over the Cleveland beginning June 1."

District 7 - Eastern District

A meeting of Forest Supervisors and other officials of this District is being held this week at Asheville, N. C. The Forest officers will spend the fi days of the conference in consultation on many important matters connected with the work of their respective Forests. The conference will be opened by Acting District Forester Reed and the program will include addresses and discussions o the following subjects:

District 7 - Eastern District (Cont.)

Organization

The organization of the force-- A large Forest	Supervisor Cobbs, Arkansas Forest.
The organization of the force-- A small Forest	Supervisor Spahr, Cherokee-Georgia Forest
Hiring and Firing	Supervisor Heller, Ozark Forest.
Trails, Telephone Lines and Lookout Tower Construction--An outline of policy	Supervisor Marsh, Shenandoah Forest.
Administrative and Public Improvements	Supervisor Bishop, Florida Forest.
Fire Detection and Suppression	Supervisor Shields, Savannah Forest.
" " " "	Supervisor Fahrenbach, Natural Bridge Forest.

Silviculture

Forest Regulation, Need of and Plan of Procedure on Arkansas Forests	Supervisor Heller, Ozark Forest.
Forest Regulation, Need and Plan of Procedure for Eastern Forests	Forest Examiner Damtoft, Pisgah Forest.
Sale Administration on the Natural Bridge Forest	Supervisor Fahrenbach, Natural Bri Forest.
Sale Administration on the White Mountain Forest	Supervisor Fritz, White Mountain Forest.
The Small Operator on the National Forests--What Help can the Service give him in Planning his Logging, Milling and Marketing?	Forest Examiner Mead, Savannah Forest.
Forest Service Sale Appraisal from the Standpoint of a French Operator. Are we Headed in the Right Direction?	Forest Examiner Lindsey, Arkansas Forest.
Stumpage Appraisals	Forest Examiner Benedict, Pisgah Forest.

Field Day at Biltmore, May 21

The Need of Planting in the Purchased Forests. (To be given at an appropriate time among the Biltmore plantations)	Forest Examiner Johnson, Monongah Forest.

Balance of day investigating Biltmore plantations, and on to Bent Creek R. S.

Grazing

Inaugurating Grazing on Virgin Soil and Method used to Obtain Satisfactory Applications from Graziers	Deputy Supervisor Plymale, Arkansas Forest
Developing Grazing on the Purchased Forests	Supervisor Spahr, Cherokee-Georgia Forest.
Grazing, Its Benefits and Limitations in a Hardwood Forest	Supervisor Marsh, Shenandoah Forest.
Game, an Economic Resource of the Nation	Supervisor Rush, Wichita Forest.
Policy for Game Preserves and Refuges in the East, and Part to be Played by the National Forests.	Supervisor Rhoades, Pisgah Forest.
The Enforcement of the New Regulations. G-30 and T-7a	Supervisor Bishop, Florida Forest.

Lands

Recreational Use of the Eastern Forests	Forest Examiner Fletcher, White Mountain Forest.
Recreational Use as Influenced by Road Development	Supervisor Bishop, Florida Forest.
Publicity of Recreational and Other Activities	Supervisor Fritz, White Mountain Forest.

Engineering

Forest Road Policy with Reference to Development of Resources of the Forest, the Community and the State	Supervisor Russell, White Top Forest
Seeking Cooperation on Roads	Supervisor Shields, Savannah Forest.

Acquisition

Acquisition, Past and Future	Forest Inspector Ashe.
Coordination of Acquisition and District 7 Work	Supervisor Rhoades, Pisgah Forest.

District 7 reports the following fires, covering 26,749 acres:

A	B	C-1	C-2	C-3
13	40	92	21	6

Most of these fires were on the Arkansas Forest, where protection is attempted on specially designated areas only, while 2,220 acres burned on the Pisgah, 1,197 on the White Top, and 533 on the Cherokee-Georgia. There were small fires on the Natural Bridge, Savannah, and Shenandoah Forests.

The spring fire season in the East is considered practically over.

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WEEKLY BULLETIN

Forest Service - Washington Office

(Not for publication)

May 26, 1919.

PREACH AND PRACTICE

Care with Fire

S A V E

Food, Forage, Forests

Be Careful With Fire

THE
FOREST
FIRE
SEASON
IS AT HAND
LEND A HAND

in the protection of the National Forests from fire. Army air scouts will supplement the Forest rangers. Army airplanes and captive balloons will cover portions of the National Forests of the West to aid in the detection and control of forest fires. Army airdromes and bases will be utilized for the experiments. Airplanes will use wireless in reporting fires as in communicating with the artillery on the battlefield. The Forest Service has heretofore relied for this communication upon men on horseback, motorcycles, or railroad speeders, and on watchers stations at lookout points equipped with telephones. In a broken or flat country devoid of vantage points, no one of these is an infallible means of locating a fire speedily. After all, the chain of defense is not complete without the essential link of the individual upon whom may rest the responsibility of prevention, detection, communication, or control. The Key to all Forest Fire Prevention Methods is the Human Agent--the Camper, the Hunter, the Recreation Seeker, He Who Strikes the Match, He Who Kindles the Camp Fire and Carefully Extinguishes or Leaves it to Smolder, to Spread, to Grow into a Conflagration Difficult to Control by the time the airplane scout, forest lookout, fire-fighter can set in motion the means to reach the Danger Spot.

PUT OUT YOUR CAMP FIRE. BE CAREFUL WITH LIGHTED MATCHES, CIGARETTE OR CIGAR BUTTS. CLEAN UP YOUR CAMP OR PICNIC GROUNDS. YOUR COOPERATION IS THE STRONG ROOT OF FOREST FIRE PREVENTION AND CONTROL.

S T O P

Needless Fires

Help Pay
The War Debt

G E T

The Safety Habit

Put Out
Your Camp Fire

WANT NATIONAL LEADERSHIP IN FOREST PRESERVATION

Representatives of Four States Ask Adequate Protection for American Woodlands

The first of a series of regional conferences planned to consider special conditions in various sections of the country, so that a comprehensive national policy of forest preservation may be formed, was held in Washington, D. C., May 20. After forest problems of New Jersey, Maryland, Virginia, and West Virginia had been discussed by representatives of those states and of the Forest Service, the following resolution was presented by Col. Eugene C. Massey, former member of the Virginia State Legislature and was adopted:

"Forestry questions are National questions as well as State and local questions; and it is the sense of this conference that the National Government should assume leadership in these matters and aid and cooperate with the several states in furnishing adequate protection from forest fires, in perpetuating existing forests, and in reforesting devastated forest districts or regions, upon such conditions as may seem just and necessary."

Some of the delegates suggested that the Federal Government should cooperate with the states in forestry work on lines similar to those prescribed in the Federal Aid Road Act and the Smith-Lever Act providing for agricultural extension work, and should make appropriations to be matched by the states.

Timber Near End

"Timber in the East is rapidly approaching an end," said Col. Graves, who presided. "If the war emergency had come fifteen years later, we would have had difficulty in meeting our requirements for wood products except with great delays and embarrassments due to shipments from great distances. The high prices of lumber are largely due to the depletion of our forests. In hundreds of communities the local supplies of lumber are being exhausted and wood-using factories, often the chief industry of the community, are closing.

The problems of forest protection and forest perpetuation are not being met. Neither the present nor the future public needs for forests are being provided for. We have our National Forests and some State forests, but they are not extensive enough nor well enough distributed to do more than meet a small part of our forest needs. The bulk of our forests are privately owned, and these are not being adequately protected nor are steps being taken to perpetuate them. We are actually using up our forest resources when we might have been growing forests at a rate to enable us to cut the maturing trees freely and with certainty of a sustained forest wealth to continue our industries and to meet our domestic needs. The situation takes on special significance when efforts are being made to build up a large export trade in lumber. It is not sound public economy to build a great export trade on a rapidly diminishing resource, and without an adequate National forest policy.

For Permanent Production

"The new movement in forestry aims to bring about permanent forest production on all lands of the country which are best suited for the growing of trees. There is enough land in this country which otherwise would be idle to produce ample supplies of timber and wood products for our domestic needs and for a large export trade. This can only be done, however, by the adequate protection of our forests and by replacing the old timber, as it is cut, with new growth.

It is proposed to secure these objectives in two ways: First, by a large extension of the public forests, including those owned by the Government, states and municipalities; and second, by bringing about timber growing on private lands through public direction and cooperation. Action is necessary both by the Federal Government and the states."

Among those attending the conference were:

F. W. Besley, Maryland State Forester; Dr. A. F. Woods, President Maryland State Agricultural College; W. McCulloh Brown, member Maryland State Board of Forestry; Alfred Gaskill, New Jersey Conservation Commissioner; R. Chapin Jones, Virginia State Forester; A. B. Hastings, Assistant Virginia State Forester; Eugene C. Massie, former member of Virginia Legislature; Edwin P. Cox, member of Virginia State Geological Commission; Nat T. Frame, West Virginia State Director of agricultural extension; H. S. Vandervort, Assistant State Agent for West Virginia; W. Hoyt Weber, representing Central West Virginia Fire Protective Association; W. D. Tyler; F. L. Dakin; P. S. Ridsdale, American Forestry Association; David T. Mason, Bureau of Internal Revenue; and a number of representatives of the Forest Service.

Meeting at Asheville to be Attended by Men from Three States

The forestry conference to be held in Asheville, N. C., June 4, is expected to furnish a general idea of what inroads have been made on the woodland resources of North Carolina, Tennessee, and Kentucky, and what measures must be taken to conserve these important items of natural wealth. It is regarded as one of the most important of the series of regional conferences planned by the Forest Service.

State forestry officials, timberland owners and others interested in the problem have been invited from the three states for which this conference is arranged. They will be asked to suggest the special needs of their states that should be taken into account in the formulation of a comprehensive National forestry program.

National Forest Receipts

Net total for 10-month period ended April 30, 1919,		$3,070,312.60
	1918	2,740,844.68
	Increase	$ 329,467.92, or 12%
Net total for 9-month period ended March 31, 1919		$1,964,947.97
Total gross receipts for April, 1919		$1,109,284.30
" " " " March, 1919		688,984.82
	Increase	$ 420,299.48, or 61%
Total gross receipts for April, 1919		$1,109,284.30
" " " " " 1918		692,562.87
	Increase	$ 416,721.43, or 60%

The various industries of the National Forests have contributed to the net improvement in receipts in the following degrees:

	Receipts for 10-month period of 1919	Increase over 1918	Decrease from 1918
Grazing			
Cattle & Horses	$1,256,388.34	$407,489.53	
Sheep & Goats	414,065.82	100,117.40	
		$507,606.93	
Timber Sales	1,134,980.32		$114,858.70
Special Use	126,664.55	14,072.58	
Water Power Permits	66,281.79		22,965.46

With the exception of a decrease in occupancy trespass and timber settlement receipts, the revenues from sources not enumerated have increased.

The report also shows an increase over 1918 in every District, in marked contrast to the nine-month period ended March 31, which registered an increase in business over the corresponding period for 1918 in only two Districts. The

National Forest Receipts (Cont.)

Districts show receipts and increases in the following order, District 3 carrying off both honors:

Receipts for 10-month period 1919	Increase over 1918 period
District 3 - - $700,452.95	District 3 - - $96,070.95
" 6 - - 517,146.61	" 4 - - 61,239.00
" 2 - - 477,050.63	" 7 - - 52,767.65
" 4 - - 444,137.23	" 2 - - 50,798.45
" 1 - - 421,570.99	" 6 - - 29,120.55
" 5 - - 377,304.18	" 5 - - 24,809.41
" 7 - - 132,650.01	" 1 - - 14,661.91

A Dozen Designs of Airplane Wing-Ribs on Exhibit

The work of the Forest Products Laboratory in airplane improvement, in co-operation with the Army and Navy Departments, is strikingly illustrated by an exhibit of twelve wing-ribs for airplanes of various types, developed at the Laboratory and transmitted by the Office of Products, of the Forest Service, to the Aviation Section, Bureau of Construction, Navy Department. A duplicate set of designs is also on exhibit in the rear hallway of the fifth floor, Washington Office.

The Army or Navy first submitted to the Laboratory a sample of the proposed wing-rib in each case, with request for tests and suggestions. The Laboratory then tested each design and from the results of the several tests prepared a new set of designs accompanied by recommendations on the proposed alterations.

The exhibit shows in each instance the design proposed by the Army or Navy and the improvement recommended by the Forest Products Laboratory. A card is attached to each rib showing name or type of machine, weight of rib, load carried in test, and other data. As an illustration of the work accomplished at Madison, the exhibit shows that, in the case of the De Haviland Machine, the Laboratory was able to reduce the weight about 30 per cent and at the same time increase the strength 100 per cent.

Government and Order of Elks Seek Protection for Elk Herd

The range of the elk herd on the western end of the Sitgreaves National Forest in northern Arizona has been investigated by Forest Service officials, the State game warden, and representatives of the Order of Elks. This herd, which numbered 84 head when introduced in 1914 by the U. S. Biological Survey, the Arizona Game Department, and the Forest Service, is in a flourishing condition and is now estimated to number about 300 head. During the winter the elk seek the lower portions of the elevated plateau which affords them range, and when the snow goes off move southward to the high elevations in search of summer feed and cool shade. In the opinion of the investigating officials, this area is admirably adapted to elk and other game, being one of the most isolated portions of the State.

The State game warden is investigating the possibility of constructing elk-proof fences around the cultigated areas of the region to protect the haystacks and growing crops from the alleged depredations of the animals. Consideration is also being given to the creation of a small game refuge for elk and other species in the region and the advice of the U. S. Biological Survey is being sought concerning the future handling of this herd. At the annual meeting of the Order of Elks to be held at Atlantic City in July, the whole subject of the preservation of the great national elk herds will be taken up. Several years ago their annual convention went on record against the killing of elk for their teeth.

Fish, Flies, and Livestock

The possible consideration of flies in connection with problems of range management must appear rather trivial to the uninitiated, but it is nevertheless true that the prevalence of flies at certain periods has considerable bearing upon

Fish, Flies, and Livestock (Cont.)

the actual meat production of National Forest ranges. Throughout the well-watered ranges the fly is a big factor. It is a source of loss for the elimination of which little has so far been accomplished. Of course there are the instinctive protective measures of the animals themselves, who stand in water, or bunch in the dense shade of trees where the flies may not be so active as in the sun, or congregate on exposed points where the breezes blow the flies away. However, no means has been devised of combating flies on the open range. There is a material loss, but no way to get at it.

A suggestion from the District Forester at Denver points to a simple and effective method of lessening this evil to some extent. He calls the attention of other Forest officials and particularly the range improvement experts to the small predatory animals which may rid the ranges of the pest, and at the same time serve other constructive ends. He points out that the small streams of water can be used to produce more of the fish which already serve their stock neighbors by devouring the larvae of the flies.

It is said that three of the big families of blood-sucking Diptera have aquatic larvae--the mosquitos, the horseflies, and the black flies. Mosquito larvae are the well-known "wigglers" that live in rainwater barrels or temporary pools or over wide areas of still water where fish can be produced. The larvae of horseflies are burrowers in the mud of the bottom. They are carnivorous and feed on the body fluids of snails and aquatic worms and other animals. The white spiney pupae are formed in the mud of the shore. The tiny black eggs are laid in close patches on the vertical stems or leaves of emergent aquatic plants. Black fly larvae live in rapid streams, attached in companies to the surface of rocks or timbers over which the swiftest water pours. They are blackish and often conspicuous at a distance by reason of their numbers. The eggs are laid in irregular masses at the edge of the current where the water runs swiftest.

The District Forester is convinced that on the basis of this and similar information all fish water on the ranges should be kept fully stocked with fish as, in part, a first measure to lessen flies. This argument in favor of the restocking of streams and the upholding of State game and fish laws for the protection of present supplies should take precedence over the recreational attraction of a well-stocked stream.

Forestry Extension Notes

The Forest and States Relations Services are cooperating in the publication of forestry extension leaflets, the purpose of which is primarily to stimulate the practice of forestry among the owners of farm woodlands, although the information contained therein will, in many cases, be equally applicable to the larger forest owners. It is hoped also that these leaflets may be of help to State Foresters, Extension Foresters, County Agents, and others who are attempting to bring about better methods among private forest owners.

All history is divided into alternate periods of war and of peaceful development. In writing the history of American forestry the future historian may well recognize the period between the Spanish war and the Great World war as the youthful age of forestry in this country. It was characterized by the remarkable growth of the U. S. Forest Service and various State forestry departments. The Forest Service has amply justified its existence in the eyes of the people in the organization and management of the National Forests. Through investigational work it has added much to our knowledge of the forests, and by cooperation with the states has made great progress in the prevention of forest fires. The chief work of the State forestry departments also has been in the latter direction, though some progress has been made in the acquisition and management of State forests. A considerable amount of research work has also been done by the agricultural experiment stations.

With the exception of fire prevention, which is virtually nothing but insurance, not more than one-fourth of the total forest area of the country has as yet been influenced by forestry ideas. Now that the period of youth is over and forestry may be said to have reached the age of maturity, the vast problem confronting the foresters of the country is how the other three-fourths of the forest area is to be brought under better management.

Touching this question there may be said to be two schools of foresters in this country: those who believe that the only solution is through public ownership, and that private forestry is impracticable, and those who believe that in some way the practice of forestry on much of the private land is feasible. Although it is obvious that public ownership of forests provides the best conditions for the practice of forestry, it is also obvious that the problem before the country is too great to be solved in that way. The extent of the annual forest destruction as now carried on is so great that it is hardly conceivable that public acquisition of cut-over land can keep up with it, and even if it could this would not save the existing forests.

The existing private forests, therefore, if they are to be saved from destruction, must look to the second school of foresters for the solution. About two-fifths of the forest area is contained in farm woodlands, and these offer a most promising field for the practice of private forestry.

Great Forest Fires in Victoria

The March issue of the Gum Tree, the leading Australian forestry publication, contains a report by the conservator of forests on the recent disastrous fires in the Otway forests, in which it is stated that 60,000 acres of country was fire swept, including 1,700 acres of forest reserve, mainly mountain ash and messmate (stringybark eucalyptus) of good quality. Eight thousand acres of unreserved Crown lands was burnt over, and a vast number of very valuable gum trees killed. A large number of homesteads, with livestock, fencing, sawmills, etc., were burned and four lives were lost. In the largest area of the Otway forests little damage was done, owing to firebreaks, the clean condition of the forest floor, etc. Smaller fires occurred during the drought, now ended, at many places in Victoria, and the statement is made that the damage from forest and grass fires in the State is greater than for many years past. The division of the State into fire districts and the adoption of American methods of forest protection are recommended by the conservator.

Shortage of Timber Supplies in the United Kingdom

(From a report by Consul General Robert P. Skinner, London, Apr. 1,1919)

The serious shortage of timber supplies for use in the United Kingdom is now receiving careful consideration at the hands of the chambers of commerce and other responsible bodies. In view of the probability that this shortage will become aggravated during the next 40 years unless measures are taken without delay to deal with the situation, Prof. E. P. Stebbing, head of the forestry department of the University of Edinburgh, states that the only decision of the Government as yet before the country is that a sufficient afforestation should be done to provide for three years war emergency. This would provide for one-fifth of the amount of timber imported in 1913. The scheme provides for afforesting 1,770,000 acres in a period of 80 years, at a cost of £15,000,000 ($72,997,000), 250,000 acres being afforested in the first 10 years at a cost of £2,872,500. Prof. Stebbing in one of his articles says:

"We found sufficient timber in the country--for the most part of very inferior quality--to enable us to win the war, but to do that we had seriously depleted the 3,000,000 acres of woods, all we had standing when the war began. If we undertook an afforestation program in this country on an adequate scale we should have to wait 25 to 35 years to obtain pit wood from the plantations, and 60 or 70 years for timber. Therefore during that period we should remain dependent as in the past on imports. The question was, Where were we going to get our supplies from? Just before the armistice was signed it had been estimated by the timber supply department that at the then rate of utilization there only remained in this country sufficient softwood timber to carry on to the end of the present year, pit wood for about six years, and hardwoods for 10 years. The supplies remaining in this country were insignificant, when we considered the gigantic amounts required for reconstruction work on the Continent and our own enormous demands.

Shortage of Timber Supplies in the United Kingdom (Cont.)

Especially was that the case when they considered our chief requirement, namely, coniferous timber. This material came from the primeval forests of Russia, Sweden, Norway, Canada, and America. Thirty-five per cent came from Russia. Sweden and Norway were gradually nearing the end of their tether in this respect. Canada might send us an increasing supply for a period of years. Canada, Newfoundland, Norway, and Sweden, and other small sources of supply might give us half our 1915 supplies during the 40-year period. The other half would approach something like 400,000,000 cubic feet, and that timber only existed in Russia. There was little doubt that our main supplies from Russia would come from her northern forests. Once the present disorganization in Russia had been mitigated we could depend upon the foreigner sending us the timber or we could go and get it ourselves."

Estimate of Lumber Necessary for Cottages

(Trade Commissioner F.W.Powell, London, Apr. 10, 1919)

According to a report of a committee of the local government boards for England, Wales, and Scotland, appointed to consider questions of building construction, there is a shortage of 300,000 "working-class" houses in England and Wales and 109,000 in Scotland. Appended to the report is an estimate of materials for 300,000 cottages, from which the following excerpt is presented, showing the minimum quantities of lumber required:

Timber for carpenters' work (floor and ceiling joists, roof timbers, etc.)	standards	171,625
Timber for joinery for the following: 1,950,000 windows, 3,600,000 doors and frames, 300,000 dressers, 300,000 staircases	standards	175,070
Oak or hardwood	do.	10,045
Rough boarding	"	6,278
Slating battens	running foot	169,537,500
Tiling battens	do. do.	302,238,750
Laths	bundles	3,564,750

Development of Trade in Trinidad Fustic Wood

An important industry appears to have developed in Trinidad during the past year in supplying to the United States fustic wood, a product of the local forests, used as a yellow dye, chiefly in connection with khaki textile goods. The Trinidad product is claimed to be of superior dye strength to that from Mexico, whence most of the fustic sent to the United States is said to have been obtained. The declared export returns of this office show that Trinidad exported, during 1918, 168,000 pounds of fustic wood to the United States, to the value of $1,880. Thus far in 1919 the exports of fustic wood from Trinidad to the United States have amounted to 128,160 pounds, valued at $1,486.

Fustic wood, sometimes known as Bois d'Orange, is not only well known in Trinidad as a dyewood but also as an excellent timber of unusual durability. Many of the trees are 13 to 14 feet in girth, but a fair average would be about 5 feet; a tree of this size would give from 3,000 to 5,000 pounds of the commercial product.

Honors Awarded to Greeley and Peck

Lieutenant-Colonel Greeley has been decorated with the medal of the Legion of Honor of France, and the British Distinguished Service Order.

Lieutenant-Colonel Peck, who has just returned from France, has been awarded the Distinguished Service Medal by our own Government.

Washington Notes

The 19th, 20th, and 21st companies of the 20th Engineers (Forestry) landed in this country on Saturday, May 24.

O. C. Merrill and T. S. Brock have returned to Washington after an extended trip which took them to all of the western District headquarters, mainly in connection with the road-building program.

Forest Products Laboratory Notes

V. P. Edwardes, while in the East on Laboratory business, read a paper on "Utilization of Hemlock Bark Waste for Tanning" before the American Leather Chemists' Association at Atlantic City, and showed the Laboratory movie. He will return to Madison by way of New York City, where he will spend some time.

H. J. Rosenthal, who has been connected with the kiln-drying work in the section of timber mechanics, has resigned from the Laboratory and will, on June 2, take up his duties as city engineer of Estherville, Iowa, where a comprehensive pr gram of paving and sewerage installation is outlined. This is the same line of work in which Mr. Rosenthal was formerly engaged at Rockford, Illinois, where he was assistant to the city engineer for 1½ years.

O. M. Butler was in conference in Chicago on May 21 with Mr. Harris of the National Lumber Manufacturers' Association and with Dr. Paul of Committee No.7 of the American Railway Engineering Association. A definite form of cooperation was outlined, according to which the Laboratory is to assist in every way possible with the study of standardizing lumber grades for all species. The committee of the engineering association was extremely interested and expressed itself as very desirous of having the Laboratory's recommendations at the earliest possible moment. This work will be undertaken as far as the Laboratory personnel permits. It is regarded as extremely important in that other engineering associations will undoubtedly adopt the standard grades or specifications in use by the American Railway Engineering Association. The influence of these organizations will be tremendous in a general adoption of standard lumber grades.

I. H. Boas, representing the Commonwealth of Australia, is visiting the Laboratory. Mr. Boas expects to establish a Forest Products Laboratory in Australia.

A. R. Joyce, of the American Wood Preservers' Association, and L. L. Hil , Chairman of the Committee on Non-Pressure Treatments, were at the Laboratory recently to discuss plans for cooperation concerning chiefly cedar poles.

District 1 - Northern District

Dr. J. R. Weir was in the office recently for the purpose of obtaining data for a study of fungi in relation to slash.

F. J. Poch, who has been at the planting camp on the Lolo, is in the Dis trict office temporarily, checking up accounts. He expects to return to the nursery at Haugan, and will be engaged in research work there until June 1, after whi he will be on planting survey work under G. W. Jones. Mr. Poch was in France for 8 months in the Aero Squadron, doing motor repair work, and regrets that he could not march into Berlin with the Second Pursuit Group or the First Pursuit Wing. The Second Pursuit Group is credited with 119 German planes in 110 actual flying days, with a loss of 10 men killed, and 15 captured, and 25 planes destroyed.

E. F. White has gone to Savenac Nursery, and will visit planting jobs at Adair, Avery, and Wallace. He will be absent for a week or ten days.

District 1 - Northern District (Cont.)

More interest is shown this spring than ever before in planting fish fry. Many thousands of trout fry of various species have already been requisitioned from the Bureau of Fisheries, and about half the Forests in District 1 are represented in these requisitions. The Western Montana Fish and Game Association, with headquarters at Missoula, has already planted about 100 cans of fish this season, in waters adjacent to Missoula. This organization is a very active one, and has aroused a great deal of enthusiasm, and secured the hearty cooperation of most of the anglers in Missoula and vicinity.

In a recent timber sale in northern Idaho, the seller has stipulated that this sale will be made under the utilization requirements of the Forest Service as practiced on the adjacent St. Joe National Forest. The lumber company, in order to put this requirement into practice, desires that the Forest Service lend them an experienced salesman and scaler for the administration and scaling of the timber. Arrangements are now being made for the assignment of a man to this work. All salary and expenses will, of course, be paid by the lumber company.

Assistant District Forester Preston has recently returned from the Sioux Forest where the details of the silvicultural working plan were considered with the Supervisor and Messrs. Baldwin and Sheffield, who were conducting the study. Everyone is probably familiar with the general conditions on the Sioux--the very great demand for timber and the relative scarcity of the timber supply. These are conditions which call for real intensive management.

The problem is complicated by the fact that the stands are all-aged, making it extremely difficult to determine accurately the growth of the timber. The merchantable timber is all the western yellow pine type. The method used in determining the growth was to secure borings of the trees at breast height and determine the growth for each diameter class by Schneider's formula. By this means it is possible to predict the growth for the next ten years. This growth figure has been checked by a consideration of the distribution of all age classes as determined by the field study and further checked in all sorts of ways to determine the accuracy and conservatism of the allowed cut.

The working plan has been almost completed for one division and it is expected that the entire plan will be available in complete form some time next winter.

In view of the importance of the plan and the relatively small number of intensive working plans for National Forests, it is very likely that the entire plan will be published and made available to foresters throughout the country.

Ranger Ed. Pulaski, of the Coeur d'Alene Forest, has invented a machine for planting trees which gives promise of being adaptable to forest planting on large scale work. E. F. White went to Wallace last week to see the machine, and states that while the blades on it are a little too small, the principle upon which it works is sound. The ideas embodied in it are most valuable, and with slight modifications he believes that this machine can be made fool-proof in the hands of temporary laborers, who, under present methods of planting, are prone to slight the quality of their work at every opportunity.

Large areas of land situated northwest, west, and southwest of Dillon, Montana, involving many townships, have been petitioned by influential residents of the locality through their Senators for inclusion within the Beaverhead National Forest. The greater part of the lands covered by the petitions, of which there are three, is typical open grassy upland, although many lightly timbered areas occur. National Forest Examiner C. B. Swim and Forest Ranger R. P. Edwards will leave Missoula on May 18 for the purpose of making a field examination of all the land covered by these petitions.

District 3 - Southwestern District

Acting Supervisor DeCamp, of the Carson, recently gave an address on game protection, illustrated with lantern slides, before the Indians of the Taos Pueblo.

The Santa Fe is now building trails to Frijoles Falls and to the Painted Cave and Stone Lions, in the Bandelier National Monument. The trails total 24 miles in length. Work will soon be started also on the Indian Creek trail, running from Santa Fe Canyon to the Pecos River.

The Santa Rita Range Reserve now presents a gorgeous spectacle of white, orange, and lemon colored poppy blossoms, according to the Tucson Citizen. Grazing Examiner Hensel states that it is the most beautiful floral display he has ever seen, and is advertising it as a mecca for motorists.

"There is no telling where one will find section corners in this man's country. Recently the Ranger on the Big Burros found one doing duty as the basestone in a fireplace, another one was being used as a weight on a barbed wire fence, both plainly marked." Gila Bulletin 5/17/19.

A field course in range livestock production will be given by the College of Agriculture of the University of Arizona in cooperation with the Forest Service. The course will be held in Tucson, Arizona, from August 4 to 11, and from then until September 6 the school will be held on the range in various parts of Arizona. Full details are being sent to the Arizona Supervisors, from whom other field officers may secure information as to cost, subjects, routes, etc.

An allotment of $3,200 from the Emergency Fund has been made for the survey, plans, and estimates of the Tijeras-Placitas road in the Manzano. It is expected that the survey work will be begun within 30 days. On the completion of the survey and estimates, a cooperative agreement will be entered into with the State of New Mexico for the construction of this road. This project is approximately 18 miles in length, and will open up a very attractive recreational area for the residents of Albuquerque and vicinity.

The resignation of John W. Dorman removes from the roll of timbersale men the veteran scaler of the force. Mr. Dorman joined the Forest Service in 1907 as a guard on the Jemez National Forest. From that time on, he worked successively on large timber sales on the Manzano, Tusayan, and Coconino. In 1914 he assumed charge of the Flagstaff Lumber Co. sale. Mr. Dorman has probably marked more timber than any other man in this District and brought to this work an interest and care which has resulted in a high degree of efficiency and splendid examples as to how western yellow pine timber should be marked and managed. It is with great regret that we announce his resignation. Mr. Dorman expects to take up his residence in southern California for the present.

District 4 - Intermountain District

The Supervisor of the Challis Forest, Idaho, has suggested that when camp grounds or recreation sites are established within the Forests they be named in commemoration of local soldiers who lost their lives in the war. This suggestion has been given some publicity and has not been much opposed. The degree of enthusiasm aroused is not, however, sufficient to warrant the establishment of a general policy. It is therefore left to the Supervisors to act upon local sentiment and conditions in the naming of the public playgrounds within their Forests for the local heroes.

Captain M. S. Benedict has returned to District 4 and will resume his former position as Supervisor of the Sawtooth National Forest.

The Commissioner of Public Works of Idaho has executed the cooperative agreement for the construction of the North Fork-Payette project on the Payette Forest, and the agreement for the survey of the Ketchum Section of the Ketchum-Clayton project on the Sawtooth National Forest. These agreements are being forwarded to Washington for execution by the Secretary.

District 5 - California District

Supervisor Bigelow reports that Nevada City and Grass Valley are cooperating to prepare a safe landing place for airplanes, as a result of the accident which occurred to Lieut. Fredell, at Glenbrook Park, on Saturday, May 10. Lieut. Fredell's trip was made from Mather Field on the date mentioned in the interest of the Liberty Loan. The plane ran beyond the limit of the grounds as they were originally laid out, struck a small tree and turned completely around. The result was a broken propeller and a torn wing.

District 5 - California District (Cont.)

Supervisor/Coffman states that 12,299 cattle and horses and 67,603 sheep and goats will be grazed on the California National Forest this year, and that final action has been taken upon all applications for grazing permits, a total of 199 having been issued. The demand for sheep range on the California Forest has been greatly in excess of the number of stock which can be grazed. Practically all applications for cattle were approved.

With the resignation of Ranger W. B. Taylor of the Sierra, District 5 has lost one of its oldest men. Taylor entered the Service in 1902 while the "Forest Reserves" were still being handled by the General Land Office, and was at that time appointed as a guard, at a salary of $60 per month. His duties that first summer were mainly fire protection, although he put up signs and cleared out one important trail (incidentally supplying his own tools). In 1903 Taylor again received an appointment as guard, and since that time has been a yearlong man, being gradually promoted from guard to assistant ranger, to deputy ranger, and to ranger, with slight increases in salary each time, and with larger and larger increases in responsibility, until 1919, when he resigned from the Service to go into sheep raising.

On the evening of April 26, Inyo County held the first of its County Itinerant's Meetings in the Forest Supervisor's office at Bishop. A good many matters of importance were discussed, among them the establishing of branch libraries, the wider use of Forest Service slides in public schools, etc. The next meeting is to be held on May 23, when it is expected that the County Superintendent of Schools, County Librarian, the Horticultural Commissioner, the Indian Superintendent, the State Fish and Game Commissioner, the County Veterinarian, and several Forest officers will be present to talk over work and plans for the ensuing month.

The present Field Advisory Committee has for its big job the work of investigating State-wide conditions in fire cooperation, and incidentally upholding the morale of those Supervisors who have particularly large amounts of cooperative fire work on their Forests. The Committee is paying particular attention to the large landowners, and the prospects look good for interesting the C.P.R.R. in a cooperative scheme that will include not only fire protection but the handling of all grazing on the Company's lands within the Forests.

Ranger E. E. Jones, resigned from the Service on April 30, and has accepted a position with the State Highway Commission. He will be Superintendent of an important State road in the central Sierras. Jones entered the Service in 1908 and has served on the Tahoe and Eldorado Forests. He was a consistent advocate of recreation grounds, and was considered a valuable all-round Ranger.

That Judge Miller is determined to enforce the State fire laws became evident when he adjourned court in order personally to verify the testimony introduced by Forest Ranger E. B. Hamilton, who had arrested a resident of Los Angeles for leaving his camp fire unextinguished. The offender entered a plea of not guilty, but the Judge, after viewing actual conditions on the ground, fined him $50.

"A patched tire leaves a track that is not difficult to follow," said Ranger W. F. Derby after the Judge had fined a resident of Lemore $50 for leaving a live camp fire in the Sequoia National Forest. Derby is a member of the Forest Service "Arson Squad" which has been instructed in police methods and has made four arrests in connection with unextinguished camp fires within the last month. Convictions were secured in each case.

The Los Angeles Board of Supervisors, on May 14, voted $10,000 to be expended by Supervisor R. H. Charlton during the coming fiscal year on that portion of the Angeles Forest lying within Los Angeles County.

Notice has just been received that the Governor has signed the State bill providing for $25,000 for the next two years to be used by the State Forester in the prevention and suppression of fires. This sum is in addition to the regular appropriations which have been received heretofore, and which are also available for general State work again this year and next.

State-wide fire prevention seems to be looking up. The State Forester is busy attending County organization meetings throughout the State, and the Supervisors are beginning to do their part. The Supervisor of the Sierra recently attended a meeting of the County Supervisors, County Fire Wardens, and cattlemen of the State in Fresno, at which there was a reorganization of the county fire laws.

District 6 - North Pacific District

District Engineer Dater has just returned from the Washington Forest, where he accompanied Acting Mayor Lane, Councilman Erikson, and Water Superintendent Young, of Seattle, and State Highway Engineer Cotterill, on an inspection trip to the Skagit River power project. At the lower dam site at the mouth of Gorge Creek several thousand feet of diamond-drill holes have been put down in prospecting for bedrock. This is the point where the city has done most of its investigative work on the project, and it expects to develop 50,000 horsepower from the Gorge Creek section. The party also visited the middle dam site at Canyon Diablo and the upper dam site at the mouth of Ruby Creek, where the head works for the large storage reservoir extending nearly to the Canadian line are located. The object of the trip was to show members of the council the work already done and the need of further careful investigation before beginning construction. In case these projects are built, the city plans to carry material and supplies to the works by auto truck over State Highway No. 11 from Marblemount, instead of constructing a railroad for this purpose. This highway already extends nine miles above Marblemount. The upper dam site at Ruby Creek is twenty-nine miles from Marblemount. The development of the project means further construction of State Road No. 11.

A nest and several eggs of the Canadian jay, commonly known as camp-robber, have been received at the District Office from the Deschutes, where the nest was found by Maynard Smith, a young lad who lives in the Crescent District. It is understood that these nests are so rare that some doubt has been expressed as to whether the bird builds a nest or not. The nest and eggs will be returned to the sender, who plans to send them to the Smithsonian Institute, which is reported to have a standing reward for such a nest and eggs.

As a fire-prevention measure, instructions have been issued to the members of Forest Service timber survey parties working in central Oregon prohibiting smoking while on line after June first. This does not prevent the men from enjoying an after-lunch smoke before returning to work.

A logging company of Seattle has made voluntary payment of $1,358 to the Forest Service in settlement of fire trespass damage resulting to reproduction, immature, and mature timber on the Dosewalips River within the Olympic Forest. The fire causing the damage started from a slashing fire late in the month of May, 1918, which was started for the purpose of clearing a logging camp site on a timber sale area of the Olympic.

Forest Examiner George L. Drake has been transferred from the Whitman to the District Office, where he will assist in timber sale work.

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WEEKLY BULLETIN

Forest Service - Washington Office vol 9

(Not for publication)

June 2, 1919.

THEN and NOW

An editorial from the Glenwood Springs (Colorado) Post of May 10, 1919

When a few years ago the editor of the Glenwood Post upheld the national government's policy of conservation of natural resources in the establishment, protection and perpetuation of the national forests, then called forest reserves, he was maligned, abused, insulted and injured because he would not stultify himself and follow the rabble and say that that was black which appeared to him to be white.

The editor had many friends among the cattlemen whose friendship he valued sincerely. It was not an easy thing for him to cross swords with them in argument on any subject. He fully realized their right to prosper, and he rejoiced with them in their prosperity. The chief point of difference was that he could not work himself up to a frenzy of excitement over the threatened danger to their industry which they pretended to see and which many of them honestly thought they could see approaching in a very short time.

We could not pose as a savior of the cattle business while taking the role of the agitator and digging up prospective troubles which never materialized. He was not a waver of firebrands and was therefore classed as an enemy. We realized then, just as much as we realize today, the great importance of the cattle industry. We never have knowingly and would not knowingly put a straw in the way of this most important industry, to which we are no more loyal now than we were in those days when the anathemas of the cattlemen were poured out upon our defenseless head.

This week this same editor, once branded as an enemy of the cattle industry, because friendly to the federal conservation plan, was called upon by the cattlemen to perform a delicate and unpleasant service--to try to prevent trouble between cattle and sheepmen and to protect the cattle industry in the advanced ground it has attained since the forestry system became effective.

We are not speaking by way of criticism, but by way of reminder. Simply a reminder that we caught a glimpse of the future fifteen years ago, while the vision is only now reaching some of our friends by whom we were criticised without reason because we dared to stand firm for our honest convictions.

Boys, we gladly forgive you for it all, and we are equally glad to be of some little service to you at this or any other time. It is not the first time that the blind have led the blind until both have fallen into the ditch, while the man with a vision was placed in the discard because he dared to have a mind of his own. It is pleasing to know that so many have long since amended their opinions and now believe as we have always believed on this most important subject. The threatened conflict this week is as nothing compared with what this country would have suffered the past few years had not federal conservation thrown its protecting arms around the stock industry by guarding and conserving the grazing areas placed under the control of the national forestry system.

Twentieth Engineers Headed for the United States

Lieut. Col. Greeley writes that all of the original 20th Engineer units have been released and are now leaving France rapidly and that all will be on the water by June 5.

Majors Granger and Kiefer will not get back until toward the end of the year, for they plan to finish their stay abroad by a trip around the world.

Major Berry, Captain Ames, and Captain Kittredge are remaining behind to assist in winding up the timber settlements and re-cessions and will not return until late in the summer.

Captain John D. Guthrie is with the American Force at Archangel on an indefinite stay.

Colonel Greeley writes that he hopes to get started for home about August 1.

District 6 - North Pacific District

District Engineer Dater has just returned from the Washington Forest, where he accompanied Acting Mayor Lane, Councilman Erikson, and Water Superintendent Young, of Seattle, and State Highway Engineer Cotterill, on an inspection trip to the Skagit River power project. At the lower dam site at the mouth of Gorge Creek several thousand feet of diamond-drill holes have been put down in prospecting for bedrock. This is the point where the city has done most of its investigative work on the project, and it expects to develop 50,000 horsepower from the Gorge Creek section. The party also visited the middle dam site at Canyon Diablo and the upper dam site at the mouth of Ruby Creek, where the head works for the large storage reservoir extending nearly to the Canadian line are located. The object of the trip was to show members of the council the work already done and the need of further careful investigation before beginning construction. In case these projects are built, the city plans to carry material and supplies to the works by auto truck over State Highway No. 11 from Marblemount, instead of constructing a railroad for this purpose. This highway already extends nine miles above Marblemount. The upper dam site at Ruby Creek is twenty-nine miles from Marblemount. The development of the project means further construction of State Road No. 11.

A nest and several eggs of the Canadian jay, commonly known as camp-robber, have been received at the District Office from the Deschutes, where the nest was found by Maynard Smith, a young lad who lives in the Crescent District. It is understood that these nests are so rare that some doubt has been expressed as to whether the bird builds a nest or not. The nest and eggs will be returned to the sender, who plans to send them to the Smithsonian Institute, which is reported to have a standing reward for such a nest and eggs.

As a fire-prevention measure, instructions have been issued to the members of Forest Service timber survey parties working in central Oregon prohibiting smoking while on line after June first. This does not prevent the men from enjoying an after-lunch smoke before returning to work.

A logging company of Seattle has made voluntary payment of $1,358 to the Forest Service in settlement of fire trespass damage resulting to reproduction, immature, and mature timber on the Dosewalips River within the Olympic Forest. The fire causing the damage started from a slashing fire late in the month of May, 1918, which was started for the purpose of clearing a logging camp site on a timber sale area of the Olympic.

Forest Examiner George L. Drake has been transferred from the Whitman to the District Office, where he will assist in timber sale work.

WEEKLY BULLETIN

Forest Service - Washington Office

(Not for publication)

June 2, 1919.

THEN and NOW

An editorial from the Glenwood Springs (Colorado) Post of May 10, 1919

When a few years ago the editor of the Glenwood Post uphold the national government's policy of conservation of natural resources in the establishment, protection and perpetuation of the national forests, then called forest reserves, he was maligned, abused, insulted and injured because he would not stultify himself and follow the rabble and say that that was black which appeared to him to be white.

The editor had many friends among the cattlemen whose friendship he valued sincerely. It was not an easy thing for him to cross swords with them in argument on any subject. He fully realized their right to prosper, and he rejoiced with them in their prosperity. The chief point of difference was that he could not work himself up to a frenzy of excitement over the threatened danger to their industry which they pretended to see and which many of them honestly thought they could see approaching in a very short time.

We could not pose as a savior of the cattle business while taking the role of the agitator and digging up prospective troubles which never materialized. He was not a waver of firebrands and was therefore classed as an enemy. We realized then, just as much as we realize today, the great importance of the cattle industry. We never have knowingly and would not knowingly put a straw in the way of this most important industry, to which we are no more loyal now than we were in those days when the anathemas of the cattlemen were poured out upon our defenseless head.

This week this same editor, once branded as an enemy of the cattle industry, because friendly to the federal conservation plan, was called upon by the cattlemen to perform a delicate and unpleasant service--to try to prevent trouble between cattle and sheepmen and to protect the cattle industry in the advanced ground it has attained since the forestry system became effective.

We are not speaking by way of criticism, but by way of reminder. Simply a reminder that we caught a glimpse of the future fifteen years ago, while the vision is only now reaching some of our friends by whom we were criticised without reason because we dared to stand firm for our honest convictions.

Boys, we gladly forgive you for it all, and we are equally glad to be of some little service to you at this or any other time. It is not the first time that the blind have led the blind until both have fallen into the ditch, while the man with a vision was placed in the discard because he dared to have a mind of his own. It is pleasing to know that so many have long since amended their opinions and now believe as we have always believed on this most important subject. The threatened conflict this week is as nothing compared with what this country would have suffered the past few years had not federal conservation thrown its protecting arms around the stock industry by guarding and conserving the grazing areas placed under the control of the national forestry system.

Twentieth Engineers Headed for the United States

Lieut. Col. Greeley writes that all of the original 20th Engineer units have been released and are now leaving France rapidly and that all will be on the water by June 5.

Majors Granger and Kiefer will not get back until toward the end of the year, for they plan to finish their stay abroad by a trip around the world.

Major Berry, Captain Ames, and Captain Kittredge are remaining behind to assist in winding up the timber settlements and re-cessions and will not return until late in the summer.

Captain John D. Guthrie is with the American Force at Archangel on an indefinite stay.

Colonel Greeley writes that he hopes to get started for home about August 1.

Why North Carolina, Tennessee, and Kentucky Need Forest Preservation

Ever since the settlers along the Atlantic seaboard pushed westward through North Carolina, Tennessee, and Kentucky; ever since Daniel Boone felled the trees that went into the first log house in the blue grass country, the smack of the woodman's axe and the crashing-down of monarchs of the forests have made an almost ceaseless refrain in these states endowed by nature with woodlands of an expanse that seemed limitless. They only seemed limitless, however. The woodmen are nearing the end of the trail. The forests of North Carolina, Tennessee, and Kentucky, along with the forests of all other states in the East, are rapidly nearing exhaustion. To take account of special conditions in these three states, a conference has been called to meet in Asheville, N. C., June 4, and State officials, timberland owners, and others interested in forestry problems have been invited to attend.

North Carolina, Tennessee, and Kentucky are regarded by Forest Service officials as among the most important forested states of the East. They produce great quantities of lumber and other forest products. The Asheville conference is therefore looked upon as one of the most pivotal of the series planned to be held throughout the country.

Kentucky, with a total area of 25,715,000 acres, has 9,500,000 in forests; North Carolina, with 31,193,000 acres, has 18,000,000 in forests; Tennessee, with 26,679,000 acres, has 12,000,000 in forests. Thus, nearly half of the total area of the three states is in forests. If this great natural forest resource is not safeguarded, one of the most important supports of industry in this section of the country will fail. In point of fact, it has already been seriously impaired, and the impairment is progressive. Many wood-using industries are confronted with the danger that local supplies of material necessary to their existence will soon cease to be obtainable. When wood-working establishments have to move or close down local prosperity is dealt a hard blow.

Forest exhaustion in hardwood regions does not necessarily disclose itself in the form of decreased forest area. The land usually remains under tree growth, but of an inferior if not valueless character. The high-grade trees are cut out. In consequence, the forests deteriorate until their usefulness for the support of industries is gone. The only way to prevent this is by the application of forestry, which maintains productiveness through right methods of cutting and through fire protection.

Forest Exhaustion Indicated

The exhaustion of the forests in these three states is indicated by official Government figures of lumber production for 1899 and for 1917--the latest year for which they are available. In 1899 the board feet cut in Kentucky totaled 765,343,000, which was 2.2 per cent of the total production in the entire country. In 1917 the Kentucky production, with a few small mills not recorded, was 329,203,000, or 1 per cent of the country's total production. For the same years Tennessee's production decreased from 939,463,000 to 582,003,000, or from 2.7 per cent to 1.8 per cent of the country's total. In North Carolina, however, the lumbermen were striking into the mountain forests in 1917, and the production for that State was 1,316,307,000, a slight increase over the 1,278,399,000 of 1899. The North Carolina percentage of the total American production was 3.7 per cent in 1899 and 4 per cent in 1917.

Industries Depend on Forests

North Carolina ranks high in wood-working industries. It has many furniture factories and extensive vehicle and implement plants that depend upon the native forests for their raw material. These industries were located within the State, because of the proximity of the forests. The same statements also are true in a slightly lesser degree of Kentucky and Tennessee. For the maintenance of these industries longer than a comparatively few years it is essential that the forests be preserved.

Other reasons why the forests of Kentucky, Tennessee, and North Carolina must be preserved are that many of the streams traversing them have their origin in the woodlands and depend upon them for their regular flow. If the forests are destroyed the streams are likely to have a surplus of water in some seasons and to be practically dry in the summer. In the wet seasons the water will rush off in floods--a condition that will destroy much of the value of the water-power development already begun. Such a condition also would greatly increase the damage done by erosion.

The forests of North Carolina, Tennessee, and Kentucky hold the key to the future happiness and prosperity of the people of one of the most beautiful sections of the United States. The evidence that they are being exhausted can not be denied. The Asheville conference is designed to bring Federal and State officials and others together to decide what should be done about it, and how.

The Work Analysis Sheets

Did you ever row a boatload of passengers upstream against a stiff wind? If you did, perhaps your thoughts ran something like this: "I know the current must continue to go down and I must continue to go up, but how it would help if the wind would change and some of the passengers would take an oar." That's about the way some of us have felt about the "Plans of Work," or the "Quantitative and Qualitative Analysis Sheets."

We started out to reach some certain goals with this boat and with the whole District force aboard. For some time almost every one sat tight and bore down on the bottom as hard as he could. Some fanned the wind the wrong way and a few assiduously rocked the boat. But now a lot of men have taken hold of the oars and sometimes the wind blows upstream. Those who started the boat are pulling as hard as ever, so we are making more progress. Consequently we have no idea of giving up the journey until we have reached the points we started out to make. We are already in sight of some of them. Perhaps a better glimpse of some of the goals we hope to reach might help in getting more people ahold of the oars.

What is the purpose of the plans, or analysis of the work? If we can get them clearly defined, perhaps it will bring us all nearer together. Did you ever know of a man making a big success in life who didn't have a well defined plan of what he wanted to do? Do you know of a rancher or stockman or merchant whose business is run efficiently, who does not make plans for its going? By our plans or analysis of work we want to establish:

1. Definite standards by which work is to be done. Often Ranger Smith, who is an experienced grazing man, spends twice as much time supervising the same amount of grazing as does Ranger Jones, who isn't an experienced grazing man. The reason usually is that Smith likes grazing work and Jones doesn't, or being experienced, Smith finds things to do in that line that Jones doesn't. Isn't it reasonable that we attempt to get Smith and Jones to give similar attention to this activity?

2. We want to know how much work there is to be done on the different districts so that Smith has the same chance to show good results as Jones. How are we going to be fair to both unless we list what each has to do and compare?

3. We want an agreement between the Supervisor and the Ranger on what is to be done during the year so there may be no misunderstanding between them about it when the season is over. Isn't that a good thing to strive for?

4. Last (but not least), we believe that we can increase efficiency by systematic planning. I know all about the arguments of the man who says, "I can't plan because I don't know what is going to happen." At least, I've heard them some hundreds of times and don't believe anyone can add anything new. "If my job consisted in moving sand in a wheelbarrow from one side of the street to another, I could make a plan that would work. But since I have many different things to do, all of which I can not foresee, I can't make a plan." This is in effect what a lot of men say. If you had the sand job you wouldn't need a plan, and the quantity and quality of your work could be readily determined. Because you have a different sort of a job is the reason for your planning for it, and if you can't increase your efficiency by definitely planning for it, you have the only job so far known at which this can't be done. If any reader can think back over his past work in the Service and say that there are not things that he did not do that could have been done had he a plan to go by, I should like to hear from him. He ought to be the example of efficiency that we are looking for.

The Work Analysis Sheets (Cont.)

"But," you say, "farmers, business men, etc., make their plans in their heads, not on paper." Couldn't they do it a lot better on paper? And if they were part of a big organization, so that their work and plans had to be correlated with that of others, would that not be an added reason for putting it down on paper? Can you make a comprehensive plan of work for a district for a year and refer to it as you go along, and keep it in your head? Are these objects we have set out to gain worth while and are we going after them in the right way? Perhaps some of the readers have some ideas about it that they will be willing to air. But before anyone answers let me say that the purpose of the plan isn't so you may say on the 15th of April what you will be doing on the 1st of August. Please note that this isn't included in the list of objects to be gained.

FRED MORRELL.

(From "The Bulletin," District 2, May, 1919.)

The Forest Service Pen Point

Since the last report of Forest Service editorial activities, published in the Weekly Bulletin of April 28, the following articles have been reviewed and submitted for the approval of the Secretary's Office. The average of more than one a day has been maintained:

Title	Author	Place of Publication
Safeguarding Municipal Water Supply by Tree Growth	Paul D. Kelleter	The American City
Drying Schedules and other Essential Information of Use to the Dry Kiln Operator in the Drying of Hardwood Stock for Furniture and Similar Uses	Section of Timber Physics of the Forest Products Laboratory	Furniture magazines
Woods Called Cedar	William H. Lamb	Lumber trade journals
Aerial Photography and National Forest Mapping	Rolf Thelen	Journal of Forestry
Quantity Production in Industrial Research	Samuel Morrell	Industrial Management
The Absorption of Moisture by Airplane Propellers During Gluing	A. C. Knauss	Technical Orders and other magazines
Manufacture of Veneer	Armin Elmendorf	Technical journals
Keeping Them Warm and Cheerful (War Work Activities)	L. C. Everard	American Forestry
Wood Ashes and Production of Potash	Ernest Bateman	Chemical and Metallurgical Engineering
Public Control of Private Forests in Norway	Samuel T. Dana	Journal of Forestry
Effect of Fertilization on the Seed of Jeffrey Pine	E. N. Munns	Journal of Forestry
Strength of Kiln-Dried and Air-Dried Spruce	L. A. Welo	Scientific American

Title	Author	Place of Publication
Tests to Determine the Mechanical and Physical Properties of Plywood Including Tables of Strength Values	L. J. Markwardt & Armin Elmendorf	Technical journals
Two Non-Injurious Tests for Determining Ultimate Strength of Interplane Struts for Airplanes	E. R. Maurer	Technical journals
The Care of Airplane Wood	F. J. Hallauer	Technical journals
The Treatment of Factory Roof Timbers	George M. Hunt	Technical journals
How Can the Private Forest Lands be Brought under Forest Management	W. N. Sparhawk	Journal of Forestry
Tests on Relative Resistance of Airplane Woods to Splintering Under Rifle Fire	G. E. Heck	Technical journals
A Labor-Saving Method for Heating Creosote Used at a Louisiana Shipyard	William Forest	Technical journals
The Conditioning of Wood Pieces for Built-up Stock	E. F. Horn	Technical journals
Density Classification of Laminations for Airplane Propellers	E. F. Horn	Technical journals
Saving Ship Timbers by Proper Piling	William W. Morris	Technical journals
Technical Notes on the Effect of Wrapping on the Strength of Airplane Struts	T.R.C.Wilson	Technical journals
The Inadequacy of Visual Inspection and the Necessity for the Kiln-Drying Specifications for Airplane Lumber	H. D. Tiemann	Technical journals
Reducing Shrinkage and Swelling in Laminated Wood Construction	J. S. Mathewson	Technical journals
The Selection of Woods for Glue Tests	L. J. Markwardt	Technical journals
The Inaccuracy of Treating Records Due to Moisture in Wood	Ernest Bateman	Wood Preserving
Pitch Pockets and Their Relation to the Inspection of Airplane parts	J. R. Watkins	Journal of Franklin Institute
Factors Affecting the Warping of Plywood	Armin Elmendorf	Lumber and aircraft technical journals
Effect of Wrapping on Strength Properties of Airplane Struts	Hobard D. Frary	Technical journals

The Forest Service Pen Point (Cont.)

Title	Author	Place of Publication
The Shrinkage of Interior Trim: Its Cause and Prevention	L. V. Teesdale	American Architect and Similar technical journals
A Study of the Factors Affecting the Water Resistance of Plywood	O. L. Sponsler	Technical journals
Bordered Pits in Douglas Fir: A Study of the Position of the Torus in Mountain and Lowland Specimens in Relation to Creosote Penetration	Gertrude J. Griffin	Journal of Forestry
Some Recent Results on Water-Gas-Tar Creosote as a Wood Preservative	C. H. Teesdale	Engineering News Record
The Selection of Veneer Species for Airplane Plywood	Armin Elmendorf	Trade journals
Warping of Aircraft Propellers with Changes of Climate	A. C. Knauss	Technical journals

Examples of Private Forestry

Replies received from State Forest officials and county agents in response to a questionnaire sent them by the extension specialists of the States Relations Service and the Forest Service to ascertain the existing needs in farm forestry show much of interest.

The Land Agent and Forest Commissioner of Maine reports the following:

One of the timber townships contains 23,040 acres, about one-third of which was burned over about thirty-five years ago. This burned-over section is now covered with a good growth of poplar which will be mature enough to cut in ten to fifteen years from now. The rest is the usual spruce type of Maine and is quite mountainous. The township was cut over in part for large spruce about thirty-five years ago. During the last seven years 32,000,000 feet have been cut under supervision. In dry times one or two patrolmen are employed at a cost of $250 a season in addition to our usual Maine forestry district fire protection. The stumpage is sold to a large paper company. Only softwoods are operated and only trees above 10 inches breasthigh are taken. All the yarding is done with one-horse teams. The small spruce left has stood up very well against the wind, not over 2 per cent having blown down. The reproduction that has started runs quite heavily to fir, but in some sections there is a good deal of spruce coming in, in some sections from 50 to 60 per cent. The Forest Commissioner estimates that the remaining stand contains about 50,000,000 feet, which at the present rate of operating will last about 12 years. By that time the poplar in the southern part should be ready to operate. Last year 20,000 four-year transplants of white pine were planted on the old burn, and this season it is proposed to plant 40,000 pines.

It will be noted that a total cut of 82,000,000 feet is an average cut of 3,560 feet for the whole township; or of 5,300 feet for the two-thirds of the township operated. It would be interesting to know the amount taken from the township in the operations 35 years ago.

The Massachusetts Forestry Department furnishes the following example of the cooperative forestry operations carried on with landowners. A tract consisting of about 90 acres on the slope of Mt. Holyoke in the town of Hadley, Mass., was purchased as a park in connection with a hotel on the summit of the mountain. About 40 acres consisted of mixed chestnut, hemlock, pine, and hardwood, from 60 to 80 years old. The remaining area was covered with a 40-year old stand of nearly pure chestnut mixed in places with hardwoods and a little hemlock. Previous to the operations of the Forestry Department, the caretaker had cut off from five or six acres about 50,000 feet and between 300 and 400 cords of wood. This was the only cutting of importance for 30 years. The purchaser advanced to the Forestry Department a capital of $5,000 to carry on the operation and the Department put in a portable mill. All of the chestnut was cut, as it was badly infected by the blight, and some of the other trees. About 460,000 feet of lumber was produced including about 5,000 ties. There was also cut about 1,200 cords of wood.

The $5,000 was used as a revolving fund and the total cost of the operations has been $16,500. The total receipts from the operations have been $19,500, and there still remains on the lot 250 cords of wood under contract at $5, which will add $1,250 more if sold. The net profit to the owner will therefore be about $4,000. Included in the cost figures are the expenses of cleaning brush as a protection against fire, amounting to $430; planting 50,000 white and Norway pine and Norway spruce, $670; supervision of a foreman, $800; overhead cost, including the expenses of the Department in handling the operation and the camps, $500.

All of the area that was clean cut was planted. On the remaining area sufficient growth was left to keep it fairly well stocked. The whole area is now in a good growing condition and would serve as a good example of practical forestry.

It will be noted that the average cut for the whole area is 5,100 board feet and 13 cords of wood. The net profit of $3,000 on the lumber amounts to $6.52 per thousand feet. On the 40-acre section it is estimated that the remaining stand runs from 8,000 to 10,000 feet to the acre of hardwoods and hemlock. Before the operations of the caretakers, the total stand must have been about 870,000 board feet or over 9,600 feet per acre.

A Daring Feat

The crew of a logging camp at Cameleon Harbour, Tribune Channel, about 80 miles north of Vancouver, B. C., witnessed an act of remarkable daring and agility, performed by one of their number, which will doubtless be talked about for many a day in the Coast lumber camps, where feats of dare-devil bravery are as common as "scraps" among schoolboys, says a Canadian exchange.

In the course of a shift to a new logging location, it became necessary to attach a cable to a very tall tree at a point 120 feet from the ground. Usually this is done by a workman equipped with pole-climbing spurs and belt, but this time these means were not available. What was to be done? It would take several days to secure the equipment from Vancouver, and a shut-down of the operations for that length of time was not to be thought of owing to the heavy expense involved.

This is where tall Andrew Busby came to the rescue, if reports are true. He was an expert chopper and skilled in using a springboard. With his axe and two springboards he began to climb the tree. Standing on the first board, he chopped a notch five feet above him, slipped the second board into the notch, climbed up, and, drawing the first board after him, repeated the performance a score of times. In an hour, while his companions below watched him breathlessly, he reached the top of the tree and affixed the rope. Standing on a board a few inches wide, he was apparently as cool at 100 feet from the ground as when he was only five feet from terra firma.

Busby soon afterwards became a private in the 230th Forestry Battalion.

(From the Australian Forestry Journal, Vol.I, No. 3, July, 1918).

Washington Notes

Colonel Graves, Assistant Forester William L. Hall, and Paul D. Kelleter are leaving for Asheville, as the Bulletin goes to press, to attend the conference on forestry problems in North Carolina, Tennessee, and Kentucky.

District 1 - Northern District

W. M. Nagel visited the St. Joe Forest planting job on May 15 and 16. Work will probably be finished there by the end of this week. The trees being set out are 75,000 yellow pine and 25,000 white pine, and in addition, approximately 30 acres are being sown to Engelmann spruce.

District 1 - Northern District (Cont.)

From the St. Joe Mr. Nagel went to Wallace, Idaho, and found about a foot and a half of snow on the planting area, so it will not be possible to start work there before June 1. Ranger Pulaski will be in charge, and 100 acres will be sown to Engelmann spruce.

Before returning to the District office, Mr. Nagel spent some days at the Savenac Nursery, working with Mr. Kitchin part of the time, and part of the time supervising the planting project near the Nursery. He is again in the field, having left on Sunday for Adair, Haugan, and Wallace, Idaho.

The work of planting about 500 acres at Cabinet, Idaho, on the Pend Oreille, is finished. This job was in charge of Ranger J. E. Breen.

Ranger F. D. Haun at Haugan, and his two assistants, A. M. Donally and R. H. Hollins, are occupied with maintenance work, repairing telephone lines, etc. Mr. Haun had charge of the Lolo planting work lately completed at Saltese, and his assistante were foremen on that job.

Mr. Hollins killed a large bear near his home about a mile from the Nursery a short time ago, though the feat was accomplished with great difficulty, and he was twice knocked down before success crowned his efforts. The bear had a fine hide.

District 2 - Rocky Mountain District

Supervisors Alva A. Simpson, of the Cochetopa Forest, and Theo. Shoemaker, of the Pike Forest, have resigned from the Forest Service.

Mr. Shoemaker entered the Service as ranger on the San Isabel Forest in November, 1907, and was promoted to Deputy in July, 1909. He served as Supervisor of the Leadville in 1910, 1911, and 1912. In 1913 he was in charge of land classification in the District, and since 1914 has been Supervisor of the Pike. He will go into the garage and hotel business at Manville, Wyoming.

Mr. Simpson began as Ranger on the Hayden in 1909. In June, 1911, he was made Deputy on the Arapaho, and in April, 1914, Supervisor of the same Forest. In the summer of 1915 he was transferred to the Cochetopa as Supervisor. He resigned from this position on April 30 to take up work as road supervisor of Saguache county.

Supervisor Arthur T. Upson, of the Sopris Forest, has been assigned to the Supervisorship of the Pike Forest with headquarters in Denver instead of to the Uncompahgre, as previously announced.

Recreation Engineer Carhart and Improvement Engineer Cook recently visited the Pueblo and Florence Municipal Camping Grounds in the San Isabel National Forest and laid out preliminary plans for the 1919 improvements on these areas. They report very enthusiastic reception and excellent cooperation from the commercial associations, rotary clubs, etc., in both these cities. The Holy Cross Forest was also visited and a camp site selected on the Pikes Peak Ocean-to-Ocean Highway near Red Cliff at the beginning of the trail leading to the Mountain of the Holy Cross. This camp site will be known as the Homestake Camping Grounds.

Construction crews are being gathered together and work started on a number of important road projects in the District. J. B. Cammann, of the District Office, Superintendent of Construction on the Buckhorn project, Colorado Forest, has already left for the field to take up the work. This road will form an important connecting link in the auto road leading into the Colorado Forest and will eliminate the famous Sherwood Hill. Work has already been started on the Lake George-West Creek road which will make it possible to take a short cut from Denver via the South Platte River to Florissant on the Pikes Peak Ocean-to-Ocean Highway, thus eliminating the round-about run through Colorado Springs.

Planting on the Pike's Peak project was started on May 1 and will continue until about the middle of June. The work is located near the Pike's Peak Auto Highway at elevations of between 9,000 and 10,000 feet. The wages paid are $2.25 per day with board and an additional bonus and carfare to those men who remain until the completion of the job. It has been very difficult to secure men for this kind of work, despite the fact that hundreds of men are to be seen loafing in front of the labor agencies in Denver. The officials of the Boys' Working Reserve have been assisting the Forest Service in lining up boys from 18 to 20 years of age. Most of these youngsters are willing but are too young and light for this kind of work.

District 2 - Rocky Mountain District (Cont.)

Excellent camp facilities have been provided for the comfort and convenience of the men. A large kitchen tent and mess tent form part of the equipment and there are accommodations for feeding sixty men. Forty "flapjacks" and twelve loaves of bread can be baked at one time in the large range. This is the seventh season for the cook on this particular job.

A hose connected with the adjacent creek provides water for the hot water boiler. For the past three years Forest Examiner Keithley, who has had charge of this project, has provided a tent shower bath for the men. A hose leading from the adjacent creek is connected with a pipe which is coiled in a Sibley stove. The water is heated in this coil and thence passes to a rubber hose on the end of which is a shower head. To secure very hot water, the flow is lessened through the shower head. For a colder bath, the water is allowed to pass through the coils rapidly. This arrangement is very much appreciated by the men.

In November, 1918, Forest Examiner Bates and Supervisor Higgins, of the Nebraska Forest, made an examination of several plantations in Nebraska with which Forest Service officials have been acquainted for many years. The Bruner Bros. plantation in Holt County, Nebraska, which was established in 1891 by the Federal Division of Forestry, was measured. The trees were planted very close; in number 2,740 per acre. Despite this density the volume per acre exclusive of bark is 2,920 cubic feet. The increment per acre per annum for twenty-seven years is 108 cubic feet. The Charles Arter yellow pine plantation in Rock County was planted in 1893 with trees five years old. These trees were spaced 16 x 16 feet, which was too far apart for maximum growth. However, they average 30 feet in height and have an average diameter at breast height of 9.5 inches. The volume per acre is 955 cubic feet, and the increment per acre per annum is 31.8 cubic feet. The Jason Arter yellow pine plantation, also in Rock County, was planted in 1888 with three-year seedlings. These trees were spaced about 11 x 11 feet and have an average diameter at breast height of 10.1 inches. The total volume per acre is 2,339 cubic feet, and the increment per acre per annum 68.8 cubic feet. There are 42 trees in the small plot, or 113 per acre, which are over 10 inches D.B.H., averaging 11.6 inches, and they are capable of producing two ties each at 34 years of age. This record surpasses even the fondest hopes of those interested in the establishment and development of the Nebraska National Forest. The figures demonstrate that planting in the Nebraska sandhills is a commercial proposition and will insure good returns to the Government.

This District is issuing weekly Fishing Bulletins, which report fishing conditions for lakes and streams in and near the National Forests. These reports are based on information furnished by field officers.

District 3 - Southwestern District

Harrison D. Burrall has returned from Overseas service in the A.E.F. and has resumed his former position in the District Office as Forest Examiner.

J. C. Mulder, Assistant Engineer, has been assigned to the Office of Engineering, and will spend the present calendar year in locating trails to be constructed from funds carried in the Post Office Appropriation Act. He will also make location surveys of recreational roads through the District, and will supervise trail work on all Forests where there are no qualified trail engineers, or where the local Forest force is inadequate to handle this extra work.

Grazing Examiner R. L. Hensel, who has been in charge of the Santa Rita Range Reserve for the past three years under the supervision of the Washington Office of Grazing, has resigned in order to take the associate professorship in pasture management in the Kansas Agricultural College, Manhattan, Kansas.

A very large and important piece of telephone construction has just been completed on the Datil Forest, New Mexico. The line is nearly 100 miles long and has been under construction for about four years. By means of this lengthy connection, it is now possible to communicate from Magdalena, New Mexico, to Williams, Arizona, over Forest Service telephone lines, and the completion of this extensive link marks an unobtrusive but long step forward in Forest administration.

A successful tree planting plan has resulted in the placing of one thousand shade trees in the city of Albuquerque, New Mexico, with a very high percentage of survival. The majority of the trees are black locust with a fair proportion of American elm. The plan, which was originated by Mr. Aldo Leopold, a former member of the

Forest Service, was conducted under cooperative agreement between the Forest Service and the Chamber of Commerce of Albuquerque. Supervision of the work by Forest Examiner Quincy Randles secured the proper depth and size of holes, the correct method of planting, the rejection of poor stock, and the proper care of the trees after they were set. The continuance of this plan will eventually make Albuquerque a city notable for its fine shade trees.

An experiment conducted at the Fort Valley Experiment Station with yellow pine seedlings brings out several important factors in securing a large percentage of survival. Scattered brush is apparently one of the most conspicuous of these factors. In 1914, on a plowed strip, seed was sown broadcast, and heavy germination secured. One-third of this strip was then covered with brush, leaving the rest exposed. Counts this spring show that the survival on the brush-covered strip is nearly three times as great as on the bare sites. The surviving seedlings are not directly under the brush but are standing in the small openings.

Damage by drought, snow (which in 1916 broke off the seedlings at the ground line) and May beetles, has caused a loss of from 81 per cent to 92 per cent, thus indicating the great importance of securing abundant crops of seedlings, and of protecting these young seedlings from destruction by sheep and goats, in order that a sufficient stand may exist to provide against losses by unavoidable natural agencies.

Plowing had a marked beneficial effect on reproduction. This may also be observed on logging operations, where seedlings frequently come up abundantly on land broken by roads, skidding, and grades, while on the undisturbed sodded surfaces adjoining few if any seedlings survive.

District 4 - Intermountain District

In the statements of receipts from the Washington Office for the period July 1, 1918, to April 30, 1919, it is noted that District 4 ranks fourth in the total amount received. We also rank second in grazing receipts for this period, with a total of $372,882.26. The total receipts for this District amount to $444,137.23.

On May 23 the Secretary of Agriculture executed the cooperative agreement for the survey, construction, and maintenance of the Hoback Canyon road. A survey party from the Bureau of Public Roads will make the survey on this project, and it is assumed that construction will commence within a short time. The Secretary also recently signed the agreements covering the Cedar-Long Valley, Modena-St. George, Heber-Fruitland, Sevier-Cove Fort, and Logan-Garden City roads. Work on all these projects will start very soon.

In order that the attractions of the Laguna Mountain recreation area may be well advertised in the Imperial Valley, lantern slides of the area will be furnished the Imperial Valley farm advisors, and will be shown at the various farm center meetings.

Dr. J. T. Faris, the author of several books of travel, has completed arrangements for a trip on the Cleveland for the special purpose of investigating recreational uses and the relationship between watershed protection and its effect on the citrus lands adjacent to the Forest.

The Palomar cooperative road project on the Cleveland has been approved, and Mr. Joe Foster, chairman of the San Diego County Board of Supervisors, stated in a recent conference with the District Engineer and representatives of the Bureau of Public Roads that the county had approved the expenditure of its half of the $42,000 appropriation.

District 5 - California District

The Board of Trade of Kern County will publish a book describing the resources of the county, and has asked Supervisor Wynne for a contribution covering the recreational features of the Sequoia Forest.

More roads are to be built in Kern County, and plans are under way for a conference between Supervisor Wynne and County Supervisor J. B. McFarland in regard to a road across Greenhorn Mountain from Ducor in Tulare County to Kernville in

District 5 - California District (Cont.)

Kern County, and another from Bakersfield to the top of Mt. Breckenridge. There are already roads to both places, but the grades are excessive. The new roads will open up popular summer camping grounds.

The farm adviser of Tulare County has reorganized the 13 fire companies in the foothill and grain sections of the county. These companies are to handle fires in all parts of the county outside the National Forest. Each company has a trailer equipped with fire-fighting tools appropriate to the country where they are to be used. Several of the Forest lookout stations overlook parts of their territory, and the Service will cooperate by notifying immediately the leader of the proper company of any fire discovered. The farm adviser has promised to furnish a list of the leaders and instructions how to get them quickly by telephone.

Cooperation with the Weather Bureau in San Francisco for fire weather warnings is to be continued this year. Mr. Drake has been assigned to the work and he is planning more localized warnings than have been given heretofore. Mr. Drake has had great success in the past in getting data upon and issuing localized frost warnings in connection with various crops. He states that, with the cooperation of field men in reporting weather and other conditions, including the location of large fires, it should not be difficult to give localized fire weather warning service which ought to be of considerable benefit.

This District has resumed the issuance of Road Bulletins to campers, sportsmen, motorists, and mountain travelers. The bulletins contain general information about road conditions in and near the National Forests of California. Since the National Forests cover most of the mountainous portion of the State and are maintained to perpetuate the supply of timber, to protect the important watersheds, and to provide for the use of all resources within the Forests (including recreation), a knowledge of the highways, roads, and trails of the Forests serves the interests of all residents and visitors.

District 6 - Pacific Coast District

The yellow pine insect infestation on the Sequoia National Forest, on which control work was done in the spring of 1918, is now being reexamined. The study of this depredation will in a few years yield results generally applicable to the control of yellow pine infestations in Districts 5 and 6.

Members of the Massachusetts Forestry Association will visit this District the latter part of June on their second National Parks and Forests tour. Their itinerary in the District includes Seattle, Rainier National Forest and Park, Portland, Columbia River Highway, Eagle Creek Camp Grounds (on the Oregon), Medford, Crater National Forest and Park, and Klamath Falls.

Reprints of an article in the West Coast Lumberman of May 16, dealing with the character and distribution of the 1918 lumber and shingle cut, Washington, Oregon, and Alaska, by T. J. Starker, have just been received. This completes four years of reports of this character. The information they contain has created considerable interest on the part of lumbermen and others, and has been used as evidence in freight rate hearings before the Interstate Commerce Commission.

Four Douglas fir logs 32 feet long and 40 inches or more in diameter have been shipped to the Madison Laboratory for airplane tests. The trees from which these logs were cut grew near Timber, Oregon. Negotiations are in progress to obtain specimens of nine Alaskan timber species to be sent to Madison for test purposes.

Henry C. Stinson has been appointed Assistant Engineer in Forest Products and assigned to the Seattle timber testing laboratory.

District 7 - Eastern District

Major Francis Kiefer, formerly Assistant District Forester in this District, but now with the A. E. F. in France, writes interestingly of a recent trip he made over the battlefields, as follows:

"Our battlefield trip is now ended. Five Cadillac touring cars containing 18 Majors and Colonels with a Captain as guide, and a driver with each car, started from Neufchateau May 14 at 8 A.M. For lunch we stopped at St. Mihiel and reached

Metz at 5 P.M., where we stopped for the night. May 15 we left Metz at 8 A.M. and reached Verdun at noon. The afternoon we spent on the battlefields north of Verdun and spent the night there. May 16 we went through the Argonne, with lunch at Varrenes and overnight at Chalons. May 17 we reached Rheims by 11 A.M. and spent some hours walking over the battlefields southeast of Rheims near Fort Pompelle. Here again we saw the scars of terrific struggling, endless trenches, barbed wire and dugouts, exploded and unexploded shells, hand grenades, rifles, and most interesting of all, 3 or 4 disabled German tanks. The whole trip has burned an impression on my memory of unbelievable human suffering and agony, hardship and privation, and a destruction of property and land that only first-hand observation can convey. I am depending upon my snapshots to give you some of the impressions I won't undertake to tell more about.

It seems incredible that a man can live through such a very hell as all that must have been. In this devastated region one rides miles and miles without seeing a living thing, scarcely a bird, untilled fields distorted with barbed wire, trenches and shell holes, and village after village, a pile of broken stone and plaster. It's the most hopeless thing one can imagine. The reconstruction of that region seems almost impossible and will require a lot of help, organized encouragement, leadership and time."

Some months ago, when District 7 timber-sale receipts were the smallest of those from any District, the claim was made that the District would climb out of the cellar in the spring. It has more than made good. At the end of April, District 7 receipts from all silviculture activities amounted to $118,620, leading not only District 4, but also District 5. The timber-sale receipts proper were about $8,000 less than those of District 5, but the sales of turpentine leases had brought in over $11,000. Since these turpentine leases are part of the harvesting of the tree crop, it seems fair to consider them with the timber sale receipts.

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WEEKLY BULLETIN

Forest Service - Washington Office

(Not for publication)

June 9, 1919.

The Boy Scouts

The following letter has been sent by the Forester to all employees of the Forest Service:

The President has proclaimed the period June 8 to June 14 as Boy Scout Week, and has recommended its general observance through the United States.

As you doubtless know, the Boy Scouts cooperated with the Forest Service last year in locating black walnut for the War Department. We have sought to encourage the use of the National Forests by Boy Scouts in various ways. The Forest Service has a peculiar interest in their activities and ideals, as they should have in ours.

I have been requested by the Chairman of the Citizens National Committee for the Boy Scouts, the Hon. W. G. McAdoo, to bring to your attention the effort that will be made during Boy Scout Week to enlarge and strengthen the organization, and also the need of the Boy Scouts for capable scoutmasters. Obviously, whatever may be done by members of the Forest Service in either of these directions must be wholly as a voluntary and personal activity, undertaken because of individual interest in boys, boy welfare, and the promotion of good citizenship. At the same time, I am glad to call attention to the fact that the Boy Scout work has the hearty endorsement of the Forest Service, that the Service is at all times ready to do anything that it properly can for Boy Scouts, and that whatever may be done by individual members of the Service, of their own choice and inclination, to aid the organization is unquestionably worth doing.

During Boy Scout Week a nation-wide effort will be made to bring to the attention of the public the merits and needs of the Scout work. For this purpose local citizens' committees are being very generally formed. If such a committee is formed in your town and you are able and inclined to give it your help in the conduct of its local campaign, you have my hearty approval of such a course, so long as no interference witht the performance of your regular duties is involved.

H. S. GRAVES,

Forester.

Redington Takes a Flyer

I was very fortunate in being able to be present at the March Aviation Field, 10 miles out of Riverside, California, on June 1 to witness the flight of the first aeroplane fire patrol initiated under the cooperative agreement between the Departments of Agriculture and War. I was present through the invitation of R. H. Charlton, Supervisor of the Angeles Forest, and through the courtesy of the Commanding Officer of the field, Major Barthof. Mr. Charlton, Ranger Jeken of the Angeles, and I represented the Forest Service.

The pilot covered a course of over 120 miles in approximately an hour and a quarter, reaching an elevation, I understand , at times of over 12,000 feet. He carried in the cockpit in front of him a map of his route and the adjacent country; also a form on which could be jotted down the location of fires detected. This slip, filled out, was enclosed in a brass tube attached to a small parachute and dropped at a place where some one would be likely to pick it up. The finder of the message was requested to phone the substance of the report to the nearest Forest Officer.

Through the courtesy of the Commanding Office of March Field, Supervisor Charlton and I were given an opportunity to fly; Mr. Charlton being taken up by Major Peabody, who has been largely interested in developing the cooperative fire patrol work; my pilot was Lieut. Hoyt. I was strapped into the observer's seat and told to keep my feet and hands away from the control stick (which I was perfectly willing to do since any interference might have spilled me as well as the pilot, and I was not ready to be spilled). A very heavy wind was blowing; but despite that fact, we got off all right and ascended to an elevation of 10,000 feet above sea-level, 8,000 feet above the field, by easy spirals. I had anticipated the trip with some nervousness; but strangely enough, after we got started, had no sense of fear, although the dip of the plane in air-pockets at times was so sharp as to cause an uneasy sensation. It was impossible for conversation to be carried on between the pilot and myself, although he did not hesitate to keep his eyes roving over the surrounding country, watching for other aeroplanes, picking out objects of interest, etc. As a matter of fact, I was amazed to note what little manipulation was required to keep the plane under perfect control. After reaching the top elevation, we flew for maybe fifteen or twenty minutes very steadily, having gotten pretty well out of wind pockets. While the general atmosphere was hazy and smoky, one could see a great distance, and straight down objects on the ground could be discerned with great distinctness. Hills that were apparently 500 to 1,000 feet when I left the ground appeared like pancakes from above. The smoke of trains at a great distance could be seen very clearly. The irrigated orange orchards in the vicinity of Riverside, far below us, and the various colors of the ground for miles around, presented a beautiful sight, and one never to be forgotten.

We were in the air for over three-quarters of an hour, and the plane was traveling at the rate of 100 miles an hour, although to me it did not seem to move at all rapidly. When the pilot got ready to descend, he headed his plane down and dropped in a series of graceful spirals with the plane at an angle of about 45 degrees. With the plane thus dipped and going round in spirals, it seemed at times to me that the mountains were on top and all around me and there was a slight sensation of dizziness for a few seconds until I got used to it. The pilot dropped the plane 7,000 feet in less than ten minutes. I had on as extra equipment only a helmet and goggles. The wind was very strong and without goggles a man would be unable to see.

Redington Takes a Flyer (Cont.)

The experience was a most interesting one and I would not have missed it for a great deal. Supervisor Charlton reported a very pleasurable experience when he returned from his trip.

There is no doubt that the aeroplane can quickly detect fires, particularly in canyons not seen by the lookout man. The main problems seem to be the accurate location of these fires and the prompt reporting of them to the suppression forces.

Going back to Los Angeles, Supervisor Charlton drove me to the Arcadia Balloon Field just out of Pasadena where we witnessed the hauling down of the big sausage balloon which had been up from eight in the morning until three in the afternoon at an elevation of 3,000 feet, watching for fires along the Angeles Forest from Mt. Lowe eastward to the San Bernardino country. An officer and observer occupied the basket and had phone connection with the ground, enabling them to phone messages down. A cable to which the balloon is attached is operated on a drum attached to a big Army motor-truck. The experiments in California with the balloons and aeroplanes this summer should certainly go far in determining just what value such methods of detection and patrol are going to have in our future fire protection scheme.

PAUL G. REDINGTON,
District Forester.

Airplane Fire Patrol in Action

Credit for detecting and extinguishing the first forest fire by the aerial fire department in California falls to the men at Ross Field, Arcadia, California, according to reports in the Washington, D. C. papers.

The fire was discovered by the lookout in the captive observation balloon at a height of 1,500 feet, who telephoned the location of the fire to the special fire truck maintained in readiness and manned by a number of enlisted men.

Just seven minutes elapsed from the discovery of the fire to the arrival of the truck and fire fighters at the Lucky Baldwin Ranch at the foot of the Sierra Madre Mountains.

The balloon observer is furnished with complete mountain maps divided into numbered squares, a duplicate of which is in the office of the fire department director on the ground.

An Important Decision

The U. S. Court of Appeals has held that an act of Congress is not necessary to vacate a grant made under the Act of March 3, 1891, and that a suit to forfeit such grant is sufficient. This decision was made in a case against the Union Land and Stock Company, which was alleged to be using, in a manner inconsistent with the provisions of the act, certain granted lands in California.

Forest Service Exhibits in France

C. A. Lindstrom, the Forest Service representative now in France with the Departmental exhibits, seems to be having a busy time. Mr. Lindstrom writes that the first installation has at last been finished and the opening day fixed. Some of the exhibit material has been lost several times. In one case thieves almost got away with some of the models. However, after a tussle, Mr. Lindstrom retrieved the models and reports that one of the thieves is now safely in jail and likely to stay there for fifteen years.

New Classification of Commodities in Foreign Trade Statistics

As a result of recently emphasized needs of the Government and of business men generally, steps are being taken by the United States Shipping Board in cooperation with other Governmental agencies to improve the export and import trade statistics through a new commodity classification. The probability is that this classification will also come to be generally used as a basis for statistics of domestic consumption and production. The Forest Service has furnished provisional schedules covering wood products and paper, and embracing nearly one hundred classes of forest and wood products and manufactures.

Recreation on National Forests

The existence of recreational features on the National Forests seems at last to be in a fair way of getting recognition by the U. S. Railroad Administration. A start has at least been made. During the present week the U. S. Railroad Administration has advertised the recreational opportunities in Colorado, not alone those to be found in the two National Parks and Monuments but also on the 20 million acres of National Forest lands. Much effort on the part of the Forest Service lies behind this inclusion of the National Forests in the Railroad Administration advertisements.

The plans for advertising, as originally made, failed to give any consideration to the recreational features of the National Forests. We are hopeful of getting more mention as time goes on.

The Ranger and the Bath Tub

The saving of a bath tub is a final feature of one of the Forest Service movies which shows what a careless hunter can do with an unextinguished match. The reason for the anxiety to save this particular tub was never altogether evident. However, the answer has come, and it is well for the field man who indulges in such a luxury to guard it carefully, for in the future all bath tubs will probably be private property. The Comptroller has held that bath tubs and other sanitary equipments placed in ranger stations are considered added improvements and must come within the $650 cost limitation. Of course, when it comes to building a comfortable ranger station within this $650 limit, there is no question between a roof and a bath tub. The absence of a tub is probably less serious than the absence of a roof and so the ranger and his family will probably have a roof, but will have to look to the old swimming hole for the family bath tub.

Prospective Forest Laws in Georgia

Steps were taken in Georgia during the past week to frame new forestry legislation. The proposed bill is to authorize the Board of Trustees of the Georgia College of Agriculture to appoint a State Forester and to provide for a system of forest protection, management, and replacement, for a State forestry fund, and for cooperation with the Federal Forest Service.

In the discussion of the proposed bill, the need for fire protection was considered to be of the most importance. Many matters will come up for action by the Legislature and it is, of course, problematical what will happen to the proposed forestry legislation. At any rate, the mere introduction of the bill will be of value, for it will focus attention on forestry and so serve as a foundation for subsequent action.

Invitation to sit with the Committee had been extended to Mr. J. Girvin Peters, of the Forest Service, and he was able to assist the members in many matters relating to State forestry legislation.

Cigarettes and Forest Fires in Canada

Every purchaser of a particular brand of cigarettes in Canada will have his attention called to the need for care by the following warnings:

> "Please do not throw away a LIGHTED cigarette.
>
> "See that it is DEAD OUT.
>
> "Lighted tobacco and matches are especially destructive in the FORESTS.
>
> "Living forests mean liberal employment. Dead forests employ nobody.
>
> "Don't be responsible for a dead forest.
>
> "This caution is printed as a contribution to THE FOREST CONSERVATION MOVEMENT."

Hardwoods in Panama Suitable for Spools and Shuttle Blocks

Two of Panama's timbers are especially adapted for the manufacture of shuttle blocks and spools used in cotton manufacturing. These timbers are locally known as guayacan and nispero. Both of them are hard, almost imperishable, take an extremely high polish, and are highly free from checking and warping. They are also among the most abundant of Panama's hardwoods. It is well known to the timber trade that the hardwoods in the United States from which these articles are made are becoming scarcer every year; in fact, the dogwood and persimmon, which furnish most of the shuttle blocks and spools, have been entirely exhausted in a great many regions. Attempts to substitute metallic articles have proved very unsatisfactory, largely because of the heat from friction.

Guayacan and nispero both grow to very large dimensions, sometimes as tall as 100 feet and three feet thick. One of the advantages in working up this timber for these small articles would be the possibility of using the smaller parts of large trees for the purpose, while still using the larger parts for other purposes. At present the big logs are got out for the general hardwood trade, and the small parts are thrown away.

Nispero is one of the commonest of the Panama hardwoods. It occurs all over the republic. The tree furnishes a white milky sap, which is coagulated into the well-known balata of commerce and manufactured into a substitute for gutta-percha and for certain classes of rubber. The wasteful methods of the Indians in collecting balata involve the destruction of a great number of these trees. Tens of thousands of them stand ruined in the forest because of being over-tapped. But these trees do not decay for many years. Nispero is an extremely hard and durable timber. It is of dark reddish color, has very little sapwood, and railroad ties made from it for the Panama Railroad more than 50 years ago are still sound. Enormous quantities of these trees occur along the long coast line of Panama, and may be gotten out to the sea by being rafted down the numerous small rivers running from the divide toward both oceans.

Guayacan is the hardest known timber. It is sometimes called lignum vitae. There are cases where pieces of this timber were used in the earliest settlement of Panama several hundred years ago, and are still in use. The tree is notable for its magnificent inflorescence. It grows in clumps all over the republic of Panama, and the vast golden dome of yellow flowers carried by the tree in the spring was once a common sight along the line of the Panama Railroad before the Canal Zone was cleared off.

Federal Migratory Bird Law Held Constitutional

The constitutionality of the Federal Migratory-Bird Treaty Act approved July 3, 1918, is upheld in an opinion rendered today by Federal Judge Jacob Trieber of the Eastern District of Arkansas in the case of United States against E. D. Thompson of Memphis, Tenn., charged with killing and possessing one robin in violation of the act.

This is one of the most important decisions ever rendered affecting the conservation of wild life. It sustains the right of Congress to enact legislation to insure the execution of the terms of the Treaty between the United States and Great Britain concluded August 16, 1916, for the protection of migratory birds in the United States and Canada.

It will be recalled that Judge Trieber in 1914 in the case of United States against Harvey C. Shauver, decided that the Migratory-Bird Law approved March 4, 1913, was unconstitutional. The present law repealed the act of 1913.

Jack is Dead

Jack is dead! Such is the word from the Black Hills. Jack became a member of the Black Hills Forest in the early days and since 1901 has been doing noble work on the Forest. His first job was hunting the famous Dendroctonus ponderosae and in this work he was so faithful that for days he went without proper food. Jack also has the distinction of having traveled with many of the men who later ranked high in the annals of the Service, but who were at that time in their salad days. Jack developed an uneven temper during the trips forced on him in the beetle hunts, whether through environment or inherent characteristics has not been fully

Jack is Dead (Cont.)

determined. As a result, he was considerably maligned in after years by some of the Forest officers who appeared later on the scene and were ignorant of past events. However, Jack was very responsive to decent treatment and under the careful tending of the local officers continued to do much good work. Jack never was a slacker. He was a good rustler, could outwalk all competitors, and this very habit of never finding a road too long or hard is the characteristic that caused Jack to be imposed on. Since 1907 Jack has had his home with Ranger Peterson at the Merritt Ranger Station and under his care spent the last four years as a worthy pensioner.

Jack was just a rawboned gray horse, and probably the first horse to be owned by the Forest Service.

Washington Notes

Austin F. Hawes addressed the Wood Turners at their annual convention held in New York City last week. Mr. Hawes spoke on the new movement in handling of private forest lands, and set forth the importance of this movement in relation to the Wood Turning industry. The convention appointed a committee to cooperate with the Forest Service. A fund of $10,000 has been made available for the association which has just incorporated under the Webb Law for export business.

Forest Products Laboratory Notes

J. O. Bixby, Assistant Engineer in the Section of Timber Mechanics, has resigned and has now gone into commercial work. We will miss Mr. Bixby, for he was with us a long time, coming with the move from Purdue to Madison. Mr. Bixby, during his connection with the Laboratory work, was active in many phases of the work.

C. J. Park, T. W. Ross, C. C. King, and K. B. Fish visited the Laboratory last week and inspected the workings of the box testing tumbler.

I. H. Boas, of Australia, addressed the members of the Forest Products Laboratory last week. Mr. Boas is making a trip around the world getting information to be used in the establishment of a laboratory in Australia, and is spending considerable time at Madison studying the methods used there.

District 1 - Northern District

A sale of 880,000 feet of timber on Mill Creek on the Absaroka, at $2.75 per M. feet has been made. It is estimated that there are 200,000,000 feet on the drainage and the purchaser plans to buy it all contingent on his success with the trial purchase.

A timber survey crew is at work on the Blackfeet. Plans call for 23,000 acres on Big Creek and, time permitting, 9,000 acres on Coal Creek. The personnel of the party is: Brooks, Chief; Stewart, Topographer; Hirst, Sutton, Carlson, Hall, and Strong; plus a cook and a packer.

There is ample legal authority to consummate a land exchange with the State of Idaho, covering Sections 16 and 36, surveyed before the creation of the National Forests in that State, according to the opinion rendered by the Solicitor of the Department. Preliminary work on the project will probably begin this summer.

Herman Work is to make a special study of the white pine belt on the Kaniksu Forest to determine its value for timber or agricultural production in the economic development of the region.

Deputy F. J. Jefferson, after two years on the Nezperce, now goes to the Clearwater as Fire Assistant.

District 2 - Rocky Mountain District

Lumberman C. A. Dahlgren of the District Office has been appointed Supervisor of the Superior National Forest, Minnesota, effective July 1. Supervisor Leslie Brownell of the Superior will take charge of the San Juan National Forest, relieving Supervisor A.F.C.Hoffman who has gone to Mancos to take charge of the

Montezuma Forest. Supervisor John Lowell of the Uncompahgre has reconsidered his decision to go into private business and will remain with the Service, assuming charge of the Shoshone National Forest, Wyoming, Supervisor Allen of the Shoshone going to Delta, Colorado, to take charge of the Uncompahgre. J. A. Donery of the Minnesota National Forest has been called into the District Office to take over the work of Lumberman in the office of Silviculture.

A wigwag system of communication between surveyors and rodmen has been instituted in this District by Land Classifier J. P. Reddick, late of the U.S.Navy. Messages are readily sent to a distance of half a mile or more either with the hands or with small flags. Much trouble and bucking of oak brush and timber is thus eliminated and transitmen have no difficulty in making their assistants understand exactly what they want. This system of communication is now in full swing in land classification and land exchange parties at work in southern Colorado.

The severe drouth conditions in northern Colorado and southern Wyoming were broken by the storm of May 31 and June 1. Up to this time, things looked bad both for crops and the range. This storm which started in with rain, later turned to light hail and snow with frost. It is yet too early to estimate the damage done to crops; but Weather Bureau officials state that the freezing temperature in Denver, Pueblo, and other towns of Colorado on June 1, was the lowest that has ever been recorded for that time of year.

Interference with timber sales operations by mining locators is an old and annoying industry on the Black Hills National Forest. Some relief may be in sight, for the Attorney General has written an opinion regarding the desirability of bringing action against certain mining claimants for interference with the sale of timber. It appears that after a timber sale had been consummated several local residents, on the basis of mining laws, interfered with the sale on the plea of alleged location long prior to the sale. The mineral character of the lands involved is conceded, but nothing was done toward the development of the locations for a great many years. From all appearances, the locations were abandoned and no rights were asserted until operations on the timber sale were begun by the timber company. The Attorney General says:

"In view of these facts, I believe that there can be no question that these mining claimants can not now by reentry cure their laches and maintain any rights in and to these abandoned claims interfering with the disposal of the timber on the lands by the Forest Service or the cutting and removing of it by the lumber company pursuant to its contract of sale made while the claims were abandoned.

It seems clear under the facts that the claimants have no bona fide intention of working the lands covered by their claims for the development of the mineral resources thereof, but are merely endeavoring to 'hold up' the lumber company by threatened interference with its operations under the sales contract.

I am therefore instructing the United States Attorney to take appropriate action in the matter, with a view to protecting the rights of the Government and of the purchaser of the timber."

District 3 - Southwestern District

About thirty thousand trees are to be set out on Santa Fe Baldy this spring. Forest Examiner Krauch is hard at this work bossing a crew of 16 men.

A sale of 1,200 M. board feet of western yellow pine, Douglas fir, and Mexican white pine, on the Datil Forest has been made to W. H. Hughes at $2.00 per thousand.

Forest Service uniforms will soon be in evidence in this District, to judge by the District estimate for purchase by the Forest Service under the contract for uniforms. The estimate calls for 30 coats, 28 pairs of riding breeches, 22 pairs of trousers, 2 rough-work uniforms, 38 shirts, 12 pairs of spiral puttees, 6 pairs of leather puttees, 13 hats, and 30 neckties. The most striking parts of this estimate are the two rough-work uniforms and the 30 neckties. For whom?

To have 26 fires visible on a single day is the report by the Elder Lookout on the Coconino Forest. In spite of a large number of fires on the Forest none has reached Class C size.

District 3 - Southwestern District (Cont.)

Supervisor Pitchlynn has been appointed to a committee to arrange a pageant on the Spanish-Indian history of the Santa Cruz Valley, to be given at Tucson.

The officer in charge of the Albuquerque branch of Vocational Training for Soldiers has agreed to refer any of the soldiers under his jurisdiction who express a desire for training in forest work to the District Forester for consideration. Men recommended by the District Forester and approved will be given a salary of $75.00 per month by the War Department and will be sent out by the Forest Service at its expense to some station where the training is to be given, where quarters are furnished. The local Forest officers are instructed that the men so assigned are to be considered primarily as in training, and while they are supposed to render all possible useful service, they are to be given as full opportunity as possible to learn the work of the position for which they are in training. This scheme is now in operation in D-5, and as men are available it will be put into effect in this District.

An important inspection trip was made recently on the Chevalon District of the Sitgreaves by Assistant Forester Potter, District Forester Redington, Assistant District Forester Chapman, and Forest Examiner Ward Shepard for the double purpose of investigating the elk situation and determining the effect of grazing by sheep upon reproduction of western yellow pine in that District. The presence of abundant reproduction on portions of the Chevalon District has sometimes been cited as an evidence that sheep grazing and the establishment of yellow pine reproduction are possible on the same area. Detailed examination of numerous small plots located on areas protected by fencing against sheep compared with similar plots taken on unfenced areas heavily grazed seemed to indicate in a very striking manner that the reproduction already established in this district must have originated on areas and during years when sheep grazing was either not present on the specific area in question or very light in character. Most of the reproduction was found to be from eighteen to thirty years of age, during which period historical evidence seems to in indicate that sheep never reached the rougher and higher country where the reproduction of this age was established. Seedlings of younger age classes are almost entirely absent even on areas covered by older reproduction wherever it is evident that sheep have grazed in recent years to any extent. On the north half of the district, which is known to have been grazed heavily by sheep for the last thirty years, no reproduction whatever is established. On this area the heavy stand of twenty-five to thirty-year old classes is, therefore, entirely absent.

Statistical figures taken within the Waters Ranger Station pasture, which has been fenced since 1910, gave an average of 4,380 seedlings per acre which had originated since the fence was built. Similar plots in the Dye Pasture, fenced in 1910, showed an average of 10,500 seedlings per acre. Plots taken on the Spellmire & Lyons sheep allotment, at a point two or three miles removed from this pasture and which is known to have been heavily grazed for many years by sheep, showed 150 seedlings per acre, all of which were badly damaged and had made no growth whateve These seedlings will probably all die, as none have become established on the area within the last thirty years.

Forest officers in studying the question of damage by sheep grazing can not arrive at accurate conclusions by merely riding through an area which is within a sheep allotment and judging of the effect of grazing by the presence or absence of reproduction more than three feet in height. The effect of grazing is mo severe upon one and two-year-old seedlings and diminishes in intensity as the seedlings gain height. It takes very severe grazing to kill seedlings after they have reached a height of from one to two feet. Damage to this class of reproduction is more conspicuous and more frequently noticed, while the destruction of the grass-like form of one-and two-year-old plants is seldom, if ever, noticed. However, comparison of the number of one-and two-year-old seedlings on fenced enclosures with similar conditions on areas outside often reveals startling and interesting results.

District 4 - Intermountain District

C. D. Simpson is now temporary Chief of Operation, succeeding M. S. Benedict.

J. P. Martin and C. B. Morse are in the field on the Targhee in connection with the survey of the Star Valley-Yellowstone Highway. This road connects with the roads from Boise, Salt Lake, and all eastern points to the western entrance of the Yellowstone Park.

The fire situation on the Boise, Payette, Idaho, and Weiser Forests has been serious but fortunately is now somewhat improved by recent rains.

Steps to formulate a policy to handle the recreational features and timber sales on State lands adjoining Payette Lake were taken recently and in this connection a field trip was made by Supervisor Mains, of the Payette, and Mann, of the Idaho, C. B. Morse, of the District Office, in company with State Land Commissioner Nash and Dean Miller, of the University of Idaho. These lands form one of the most beautiful recreation areas in the State and are extensively used by the people from Boise and neighboring towns.

F. S. Baker is back again at his old stand at the Great Basin Experiment Station after a protracted stay in Washington and the East on war work.

Earl C. Sanford is back on the job and now in charge of the Boise timber survey project. Upon the completion of this assignment, Mr. Sanford will return to the Caribou to take up the duties of Supervisor succeeding Mr. Simpson, who has moved to the Office of Operation in Ogden.

The cooperative agreement covering the construction of the Montpelier-Afton road has been signed by the commissioners of Bear Lake and Caribou Counties, Idaho, and now goes to Washington for action by the Secretary.

Property Auditor Falck is on his usual rounds. The present trip will take him to Kalispell, Great Falls, Choteau, and Helena.

District 5 - California District

The Board of Supervisors of Santa Barbara County will cooperate with the cattlemen's association in maintaining a patrol and in fighting fires. The necessary missionary work for this cooperation was done by Supervisor Hall.

R. T. Moore, of Lemore, California, left a live camp fire on the Sequoia and it cost him $50. Forest Ranger W. F. Derby states that a patched tire left an easy track to follow. This is the fourth camp fire case handled by Derby and convictions have been secured in each case.

A field demonstration of rodent work and their depredations on the open range in the Eldorado Forest has been arranged for with the Rodent Control Division of the State Horticultural Commission. It is hoped that this demonstration will serve as a basis for a logical campaign of eradication.

Ranger E. E. Jones, of the Eldorado, has resigned after eleven years with the Service. Ranger Jones came to the Eldorado Forest from the Tahoe. As District Ranger he had many things to keep him busy, particularly the development of the recreational work on the Eldorado. Mr. Jones is now Road Superintendent with the State Engineering Department.

District 6 - North Pacific District

W. G. Weigle, after eight years among the snows of the Alaskan Forests is now in charge of the Snoqualmie.

Many calls for cedar only have been made on the Snoqualmie Forest. However, present conditions on the Forest do not justify sales of this character which aim to cut the cedar and not take the fir.

Forest Examiner E. J. Hanzlik has completed his assignment at the Canadian Returned Soldier Forest School at Vancouver and is back in the U. S. A.

District 7 - Eastern District

F. W. Reed has been promoted to District Forester, a pleasing event, for it not only saves him the burden of writing "Acting" before the title of his job, but gives him full credit for the job, which he has held down for some time past.

Forty-three members of the Appalachian Mountain Club from Boston, Massachusetts, recently made an excursion into the Southern Appalachian region. They made their headquarters at Asheville, N. C., and among other points of interest visited Mts. Pisgah and Mitchell in the Pisgah National Forest. About one-half dozen of them made the entire trip to Mt. Pisgah on foot in company with one of the Forest Officers, while the rest of the party went up to the Buck Spring Lodge on the Vanderbilt property in automobiles over the Pisgah Motor Road, confining their pedestrian efforts to enjoying the one and a half miles of trail from the end of the road to the top of the mountain.

The whole party a couple of days later went up Mt. Mitchell by way of the Perley and Crockett Company's logging railroad and spent three nights at Camp Alice, situated at the end of the main line of the logging railroad and about two miles from the top of the mountain, and from that point made several expeditions to various points of interest over the mountain.

The Appalachian Mountain Club is an organization which for over forty years has been an important factor in developing the recreational use of the White Mountain region in New Hampshire, now mainly comprised within the White Mountain National Forest. This is the first official visit of the Club to the Southern mountains and is, it is sincerely hoped, the beginning of new recreational development on the National Forests in that region.

Initial steps were taken to organize the Southern chapter of the Club with headquarters at Asheville. In cooperation with the officers of the Forest Service, this chapter will devote itself to awakening interest in the use of these mountains for outdoor recreation along the lines of tramping, mountain climbing, camping, etc. The members of the party who made the recent visit to Asheville were very much impressed with the beauty of the Southern Appalachians and with the abundant opportunities there available for the same kind of outdoor enjoyment that the Club has been so interested in in the past years in the White Mountains of New Hampshire.

The new Asheville Chapter of the Club will, it is believed, be able to give the Forest Service a great deal of most valuable assistance in the working out and mapping of recreational trail systems and in the development of rest camps and other stopping places which at present are almost entirely lacking in the region outside of the main towns, and which are so essential if riding and tramping through the mountains is to become popularized as it is in the White Mountains.

WEEKLY BULLETIN

Forest Service - Washington Office

(Not for publication)

June 16, 1919.

ILLINOIS COMES TO THE FRONT

The following joint resolution of great interest to foresters has been passed by the Illinois Legislature and presented by Senator Sherman to Congress for record:

Senate Joint Resolution 31

Whereas the United States during the last half century has witnessed the reduction of the forest in one region after another. The white-pine forests of Pennsylvania, New York, and New England disappeared nearly a half century ago. Likewise the pine forests of the Lake States for the most part were obliterated before 1900. The Southern pineries, which for 20 years have been the main supply of lumber for Illinois and other Central States, will, according to statements recently made by authoritative sources, be to a large extent exhausted within the next 10 years; and

Whereas the effect of the exhaustion of the commercial forests has been the closing of near-by industries which depended upon these forests for supplies and the shifting of local population to new centers, involving heavy penalties upon both the industries and the people. As another result the country has observed the area of cut-over timber-land increase to an area estimated by the Secretary of the Interior at 228,000,000 acres. Far the greater part of this land is in the North, South, and East, and a very large percentage of it is nonagricultural. With recurring destructive forest fires millions of acres of it have become waste and can only be restored to productiveness through an extensive program of reforestation; and

Whereas the wood-using industries not depending upon uncertain local forest supplies have become centered to a very large extent in the thickly populated districts east of the Mississippi River and are drawing their supplies from the remaining forests in the Eastern States, the Gulf States, and the States adjacent to the Great Lakes. A large number of such industries are located in the State of Illinois, with the city of Chicago the center of a very large and important group. Chicago has for many years been the chief lumber distribution point of the United States and the greatest point of lumber distribution in the world. These important industries, including the manufacture of railway cars, boxes, sashes and doors, farm machinery, furniture, pianos, vehicles, and many other articles, are now threatened by the exhaustion of the forests from which their supplies have been drawn. They now face the necessity of bringing timber from the Pacific coast with heavy freight charges added to the cost. To the same Pacific coast supply the country must look for lumber for general construction purposes. The transportation system of the country must add to its present burdens the transcontinental shipment of very large quantities of lumber, a bulky product upon which a high freight rate greatly increases the cost to the consumer, and

Whereas such forests as are owned and managed by the Government, the national forests, are 97 per cent in the far West, and for that reason can not contribute substantially to the solution of the problem of wood supplies, which has become so threatening to the industries of the Eastern States; and

Whereas the situation is of such gravity as to require the most careful consideration by the Federal Government and the States to the end that policies may be adopted that will lead to the solution of the problem: Therefore be it

Resolved by the Senate of the State of Illinois (the House of Representatives concurring therein)

"That the Fifty-first General Assembly of the State of Illinois urges the attention of the President and the Congress of the United States to the present timber situation and recommends that, without delay, there be formulated such a national program of forestry as will insure the future timber supplies required by the industries of the country. As an example of what should be done, this general assembly points to the wise course of the Republic of France in so managing its forests for more than a century that they contributed substantially to the winning of the great war.

"It is further urged that the Federal Government, acting independently or in cooperation with the States, inaugurate action looking toward such measure of public control of the remaining bodies of original timber as will make sure that their supplies will be available as needed by the industries.

"It is furthermore urged that comprehensive plans be put into effect for restoring the forest on cut-over lands which are nonagricultural in character in the Eastern States, in the States bordering the Great Lakes, and in the South, in order that timber supplies from these regions may be available to the established industries of the Central and Eastern States."

EFFECT OF TIME OF CUTTING TIMBER ON ITS DURABILITY

Many of the theories which have been advanced regarding the durability of wood attribute too much importance to the time of cutting. As a matter of fact, the time of cutting has very little effect upon the durability or other properties if the timber is properly cared for after it is cut. The method of handling posts, poles and logs at different times of the year, however, does influence their durability.

Posts, poles, and other rough products cut in late spring and early summer are more likely to be attacked by insects and fungi because the wood is freshly cut and in the most favorable condition for attack at a time when insects and the spores of fungi are most active. Seasoning also proceeds more rapidly during the warmer months and may cause excessive checking. If the wood is peeled when cut and piled openly on skids for seasoning the opportunity for decay is reduced to a minimum, but checking is not retarded. In no case should the wood be allowed to lie in direct contact with the ground. If checking is an important consideration, it can be reduced somewhat by locating the piles in a shaded but dry place. The bark peels most easily in spring. It can be removed at any other time of the year but the labor and expense will probably be greater.

Timber cut in late fall and winter seasons more slowly and with less checking than that cut during the warmer months; and when proper storage or handling is impracticable, winter cutting is best. Fungi and insects do not attack wood out of doors in cold weather and by the time warm weather arrives the wood is partly seasoned and somewhat less susceptible to attack. It is for this reason that winter cutting is advantageous and not on account of a smaller amount of moisture or sap in the wood in winter as the popular belief has it. There is practically no difference in moisture content of green wood in winter and summer.

(Contribution by the Forest Products Laboratory)

PREVENTING DAMAGE TO LOGS IN STORAGE

Logs stored on skidways or left in the woods during the summer months may be damaged in a number of ways, principally through sap staining, insect attack, decay, and checking. Certain species of wood are more susceptible to injury than others, and the extent of the injury is also dependent on the time of cutting, the climate, and the storage conditions. The possible financial loss and amount which can profitably be expended to prevent it will be influenced by the value of the logs, the purposes for which they are to be used, and the probable extent of the injury. Where conditions permit, one or more of the following methods may be found useful in minimizing the loss.

Storing under water will prevent blue stain, checking, insect attack, and decay. (The logs would, of course, be subject to marine-borer attack in salt or brackish water along the sea coast where these pests are active.) Wood of any species completely submerged in water will resist decay indefinitely. Alternate wetting and drying, however, favor decay.

Storing on skids in such a way that the air can circulate freely around each log will prevent the accumulation of moisture and thus retard decay. It will favor checking, however, and, unless the bark is removed, will have little effect in preventing insect attack. The skids should be located where there is good air circulation, and they should be raised off the ground. Weeds and brush should be cut down.

Peeling the bark completely from the logs will do much to eliminate insect attack and retard decay, by removing the protection required by many insects, and by allowing the logs to dry more rapidly. It will favor checking, however.

Painting the ends of the logs with paints of the proper kind will very materially retard the loss of moisture and thus retard end checking. If the logs are peeled and properly piled on skids, painting should not increase the danger from decay or sap stain. A yellow ochre or barn paint will do fairly well for this purpose.

Painting the peeled surfaces with coal-tar creosote will be useful in preventing sap decay, and if applied soon enough may be effective in retarding sap stain. Any grade of creosote in common use for wood preservation is suitable, and expensive oils are unnecessary.

All the methods described, except water storage, may be employed at the same time and to good advantage if circumstances justify the expense.

(Contribution by the Forest Products Laboratory)

The Dendograph

A new device for recording growth and other variations in the dimension of trees has been perfected by the Carnegie Institution. Two types of the apparatus are in use. Both employ a belt of wooden blocks hinged together and fastened securely on a supporting belt around the trunk of a tree. In one type a series of plungers in contact with a number of selected points around the tree carry on their outer ends an encircling wire. Any change in position of the plunger moves the encircling wire, and the motion is recorded by a pen on a suitable revolving drum. The second type carries a yoke which encircles the trunk of the tree with four points of contact. Changes in volume of the trunk are followed by differences in distances between the contacts, which are duly recorded as above. These devices furnish a record of the daily and seasonal changes in the size and form of tree trunks.

Measuring the Temperature of Leaves

A sensitive electrical apparatus for measuring the surface temperature of leaves has been devised, according to a recent item in a scientific journal. This apparatus is now being tried out in the desert and mountains near Tucson, Arizona, and the Santa Lucia Mountains in California.

The outstanding result so far is the rapidity with which the surface temperature of a leaf growing in the open may fluctuate. Changes of from one to three degrees C. are observed within from 20 to 60 seconds. If a moderately strong wind is blowing the change may amount to five degrees in 30 seconds.

Closed Season on Elk in Canada

An indefinite closed season for elk has been recently established by the Saskatchewan legislature, and now the elk is protected throughout its range in Canada. Agitation to this end has been going on for some time in Canada, and the various legislatures have one by one enacted measures for protection.

Government Exhibits for 1919

Five circuits of fairs to be visited by the combined Government exhibits have been designated. The Forest Service is one of the contributing bureaus to these exhibits.

Circuit No. 1 is the only one to get far enough West to extend into the territory of the western National Forests. This circuit starts at Sedalia, Mo., August 9, and will be at Helena, Mont., Sept. 8 to 13 inclusive, at Yakima, Wash., from Sept. 15 to 20 inclusive, at Salt Lake City from Oct. 6 to 11, and at Phoenix, Arizona, from Nov. 3 to 8. Two circuits will touch the Eastern Mountain region (White Mountains and Southern Appalachians) and the South, and one will cover territory in the Middle West and Texas.

All-Night Patrol

An all-night flight of the observation balloon was made last week at Ross Field in southern California. The extremely dry weather seemed to justify this night patrol, which is claimed to have been the first all-night flight of an observation balloon in America.

The Air Service announces that a limited number of men enlisting within the next ten days will be assigned to the airplane and balloon posts operating the forest-fire patrols in California.

Two planes of the Jn-4H type, equipped with radio, are in service patrolling the southern part of the Cleveland Forest.

Aerial Forest Fire Patrol

The possible forest acreage that could be brought under the protection of an aerial forest fire patrol is estimated to be about 90,000,000 acres, according to the Air Service of the War Department. By States this acreage is as follows:

Arizona	5,000,000
California	25,000,000
Colorado	10,000,000
Idaho	5,000,000
Michigan	1,000,000
Minnesota	5,000,000
Montana	8,000,000
Oregon	15,000,000
Washington	15,000,000
Wisconsin	1,000,000
Total--	90,000,000

The Pulp and Paper Industry in Canada

The growth of the pulp and paper industry in Canada in the past few years is shown in an interesting report on the census of the pulp and paper industry for the year 1917, recently published by the Dominion Bureau of Statistics. The statistics for the years 1915 and 1917 are used as a basis of comparison. In 1915 the number of active mills was 80, and the value of production $40,348,001. In 1917 there were 83 mills in operation, with the production of $96,340,327, an increase over the former year of nearly 140 per cent. This large gain in the value of production was partly due to the increased market price of pulp and paper.

Another important measure of growth is found in the consumption of pulp wood, which in 1915 was 1,405,836 cords, according to the returns of the Forestry Department, and in 1917 was 2,104,334 cords, an increase of nearly 50 per cent. The total cut of pulp wood was 2,355,550 cords in 1915 and 3,122,188 cords in 1917, exports of pulp wood having risen from 949,714 cords in 1915 to 1,017,854 cords in 1917.

The pulp and paper industry in the United States is closely identified with the industry in Canada and operators in this country are giving considerable attention to the Forester's new program of forestry.

White Pine Blister Rust Conference

The serious menace to our timber resources through the further spread of the white pine blister was considered at the recent conference held in Portland. In order to prevent the introduction of the disease in the West ways and means were discussed and suggested action outlined in a set of resolutions which propose that an effective quarantine be enforced by the western States; that emergency funds be placed at the disposal of the State officials in case of a sudden outburst of the rust; that the Railroad Administration be requested to have its employes refuse for shipment five-needle pine, currant, or gooseberry plants; and that cooperation to control the disease be obtained with the Federal Government and with Canada.

Canada's Lumber Export Problem

The British Timber Controller who is arranging for the milling of large amounts of lumber for the British Government at Vancouver, British Columbia, announces that plans are under way for a practical test of shipping lumber from that point to England by way of the Panama Canal by means of "demountable" rafts or ships. This announcement has aroused much interest, since, if the experiment proves a success, it will solve the problem of lack of tonnage and high freight rates which has confronted the lumber industry of British Columbia for a number of years.

The ocean-going demountable raft will be more like a real ship than the wire-bound log raft which has been in use on the Pacific Coast for some years for long-distance tows, according to a well known lumber authority who has investigated the plans of the demountable raft. The chief difference between the ordinary wooden auxiliary ship and the demountable raft will be that whereas the ship is a shell inclosing a bulk of lumber, the demountable raft will be a solid mass of lumber in the shape of a ship held securely together with innumerable heavy iron bolts.

According to present plans, from 3,000,000 to 5,000,000 feet of timber will be contained in each demountable ship. The great raft will probably draw about 18 feet of water, which will give it a freeboard of about 8 feet on deck. A hollow space will be left aft for fuel and supplies and for the placing of the living and sleeping quarters of the crew. The engine to supply the power to propel the craft will be bolted down to the deck of the ship instead of being in an engine room.

Upon arrival in England, the demountable raft would have its engine removed and shipped back as freight to British Columbia. Everything else on board, including the collection of iron rods which had held the raft together would find a market in England.

Forest Products Laboratory Notes

In the recent drive for contributions to the Department of Agriculture memorial to be erected in Washington to the men of the Department who lost their lives in the Great War, the Laboratory contributed the sum of $28.30.

The heaviest small box ever tested at the Laboratory was tumbled in the big drum on June 2. The box, which is for export shipment, was 22" x 16" x 6-1/8" inside and was packed with zinc battery plates weighing 530 pounds, or about as much as a solid piece of cast iron the same size. One of the boxes withstood 73 tumbles and another 109 before going to pieces.

J. D. Studley, who for almost two years has been connected with the Section of Timber Physics, has resigned to take up private work.

Fire Engine #4 was called to the Laboratory last Saturday afternoon, a week ago, to extinguish a fire between the high board fence and a pile of ties just to the east of the Box Laboratory. When the fire was extinguished the pile had burned to within six feet of the Box Laboratory.

H. J. Elwes, representing informally the University of Cambridge, England, visited the Laboratory on Decoration Day. Mr. Elwes is the author of the book, "Trees in England", and seemed particularly interested while here in material collected by the Section of Timber Mechanics illustrating the density-strength relations of fir and pine. He hopes to arrange to have graduate students in forestry and allied lines sent to this country to specialize in logging engineering and forest products.

The practice of wrapping airplane struts or wing beams with canvas developed under the supposition that such wrapping increased the strength of the members at critical points, prevented sudden failures, and kept out moisture. Wrapping has been advocated especially for cross-grained material in order to make available for airplane construction stock which would otherwise be rejected. Extensive tests have been made at the Laboratory for the Air Service to determine the reinforcing value of such wrapping. These tests were made upon cross-grained struts of Sitka spruce and Douglas fir partly or entirely covered with Bakelized canvas or the standard cotton tape, and upon some of the same struts with the wrapping removed. The conclusions reached from the tests were as follows:- The addition of Bakelized canvas to cross-grained struts increases the load somewhat but decreases the load per unit weight; it also increases the deflection and work to final failure and hence the shock-resisting capacity of the struts. Wrapping cross-grained struts with cotton tape according to standard methods has no appreciable effect on their strength. It is doubtful if any other methods of wrapping such as cording would increase the strength properties very greatly. There is also the probability that any wrapping or covering will be loosened by weather changes. It is believed that canvas, tape, or cord covering is of less value than the same volume of wood, and since such a covering is likely to be heavier than wood it is of still less value when compared with the same weight of wood.

Washington Notes

Don P. Johnston stopped off to see us in Washington last week. Mr. Johnston will assume the duties of Assistant District Forester in charge of Operation at San Francisco about July 1.

District 1 - Northern District

W. J. Derrick, Supervisor of the Madison as successor to R. G. Willson who resigned, was a recent caller at the District office in Missoula.

Mumps in Missoula is the report covering the views of Forest Inspector C. G. Smith from the Washington office, and as a result Mr. Smith's field trips in this District have been somewhat interfered with.

The Fire Journal reports that, as a result of general rains throughout the District, vegetation has started and the fire situation is good. The Forest officers are not too sanguine, however, and are not careless but very much on the alert.

R. B. Adams, telephone engineer, has returned to Missoula from a trip to Washington and other points in the East. Mr. Adams brought with him four Signal Corps radio telephone sets, type SCR-67. Two sets will be used in this District and two have been sent to Portland.

National Forest Examiner Swim and J. C. DeCamp are on the Lewis and Clark Forest making some special land classifications.

Women lookouts on the Bitterroot have the following to their credit according to a letter from Forest Supervisor W. W. White to the District Forester:

"In reply to your verbal inquiry about women lookouts on the Bitter Root:

Two women served on the Bitterroot in 1918 on the Bare Cone and Nezperce Peak lookouts. Their services were satisfactory; in fact, better than the average man employed in 1918, though probably not so good as most of the lookouts secured from Forest schools in the past. Both women were teachers in the Butte public schools.

One of the young women was a good story-teller, jolly and an all round good mixer. She had exceptional ability as a walker, in finding her way about the hills, and in taking care of herself in the mountains.* On either the first or second night in camp on the lookout, lightning struck a tree and set fire to its crown within 50 yards of camp. The young lady admitted that she was panicky for an instant, but she did all that a man could have done; with shovel and ax she suppressed and guarded the fire until safe. Her judgment of 'safe' proved correct, too.

The other young woman was rather new to the hills. She had the rare combination of culture and common sense that commanded the highest respect of all. This quality, coupled with gameness to see anything through once started was pretty certain to make her work satisfactory. One or two fires were started by lightning within one or two miles of this lookout. The young lady did not call for help, but reported the fire and the fact that she was going to try and put it out at once, and did it.

The diary of this young woman, which you have, is not of value or interest because of any direct suggestions made concerning our forest problems but because of its literary quality and the romance, enthusiasm, and imagination she puts into the things that are the most prosy and humdrum to the forest officer.

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*She could lose the average man in the forests and mountains.

District 3 - Southwestern District

Thirty-five years underground and still in good condition is the record for some hand-hewn juniper mine timbers just taken out of the Ruby Silver Mine at Gold Hill on the Big Burros district of the Gila Forest. These timbers were hewn from large trees, some being 18 inches square.

One wild turkey hen is reported to have been seen on the Coronado Forest a short time ago, and the conclusion is that it is the sole survivor of the shipment of wild turkeys turned loose on the Huachuca range last year in cooperation with the State Game Warden. The report comes from a cowboy on the Huachuca range to the effect that the wild turkey appeared with a bunch of domestic turkeys at feed time. On the cowboy's approach, however the turkey took to the brush.

As a result of the unprecedented heavy rains during the last two weeks of May, there has been considerable germination of yellow pine seed on the Coconino. Ordinarily, on account of dry soil conditions in May and June, germination does not take place until the arrival of the summer rains in July.

It is interesting to speculate as to the probable result of this early germination. If the summer rains begin early, many of the young seedlings may survive; if, on the other hand, the summer rains are delayed, the chances are that practically all will die. Of greatest concern is the fate of the many seeds in which germination may have begun but was arrested when the rains ceased.

Supervisor Mullen is busy trying to locate a suitable summer camp for boys on the Manzano Forest. The camp is to be under the joint auspices of the Y. M. C. A. and the Boy Scouts. The probability is that later there will be a girls' camp under the auspices of the Y. W. C. A.

Arrangements have been completed for a Boy Scout camp accomodating 150 boys on the summit of the Sacramento Mountains on the Lincoln.

Auction sales of 1,000 cavalry and 700 artillery horses at Camp Cody, Wyoming, and Fort Bliss, Texas, have been announced by the War Department. Buyers may select any number from one head up to carload lots. Terms are cash or certified check. Forest officers on the Coconino and Santa Fe who clubbed together have bought some excellent horses at low rates and at prices comparable to those for ordinary cayuses bought locally.

Personnel Changes at Albuquerque

H. H. Chapman, Assistant District Forester at Albuquerque for the past two years, will return about September 1 to Yale to resume his duties as Harriman Professor of Forest Management. Mr. Chapman has much to his credit while attached to the District office, but of particular interest is the establishment of that rara avis, a workable silvicultural working plan.

Other changes in assignments will be made in the District office. Raymond E. Marsh, now Supervisor of the Coconino, succeeds Mr. Chapman as Assistant District Forester in charge of Silviculture. E. G. Miller, now Supervisor of the Prescott, goes to the Coconino.

R. L. Deering, just back from two years in France, succeeds Mr. Miller as Supervisor of the Prescott.

Aldo Leopold returns to the Forest Service as Assistant District Forester in charge of Operation, succeeding Don P. Johnston, who, however, has been on war detail to Madison for some time and now goes to San Francisco as Assistant District Forester in charge of Operation.

Edward P. Ancona, now on detail at Madison, will return to Albuquerque at an early date and will be assistant in the office of Operation.

Ward Shepard, who has busied himself with Operation matters during the year, will be in charge of information and game work.

District 6 - North Pacific District

"Popular Mechanics" for June contains two pages of pictures illustrating a short write-up of the Eagle Creek camp grounds and scenic trail, on the Oregon.

Forest Inspector A. O. Waha has arrived in portland and taken up his work as chief of Operation, succeeding C. H. Flory, who goes to Alaska to assume charge of the Alaska Forests.

Telephone Engineer C. M. Allen has returned from a month's detail to District 3. Mr. Allen is now working on plans for the installation of the wireless sets secured from the War Department for use on Mount Hood.

Dr. John T. Faris, who is gathering the material for a book on Seeing the Far West, is spending two weeks in the District seeing some of the chief points of interest in the National Forests and Parks. Mr. Talbott will meet him at Klamath Falls and accompany him through central Oregon and over the Columbia River Highway to Portland, and Mr. Jackson will go with him to the Olympic, Rainier National Park, the Snoqualmie, and the Chelan.

A folder just issued by the United States Railroad Administration, entitled "Pacific Northwest and Alaska", has a write-up of the mountains of Washington and Oregon which contains considerable information about the recreation features of the National Forests of the District. Six of the pictures illustrate scenes on the National Forests of Oregon and Washington.

Effective cooperation between the various fire protection organizations operating in the State of Washington is the goal set, and to r each it, if possible, a series of meetings for fire patrolmen, wardens, and inspectors will be held at various points in the timbered regions of the State. The series begins with the meeting at Vancouver June 17, followed by meetings at Chehalis, Seattle, Sedro-Woolley, Ione, and Marcus. Representatives of the Washington Forest Fire Association, the State Forestry Department, and the Forest Service will attend the first four meetings. The meetings at Ione and Marcus will be in charge of State Forester Pape and Weeks Law Inspector Chapler of the Forest Service. The Washington Forest Fire Association does not operate in this part of the State. The object of these meetings is to call together the men of the different organizations and give them an opportunity to confer on their common problems and become better acquainted.

The Florida Forest broke into print some time ago, setting forth its particular charms. Now comes the Olympic Forest to tell us of its feverish activity and diversified interest. The Olympic, we all know, claims to have within its boundary one-seventeenth of the total of National Forest timber in the United States. It also is proud of having the untamed and massive Roosevelt elk, and boasts of numerous other wonders. Recently, during a period of five days, the following record was made: The Supervisor made his appearance at five meetings. He appeared before two hundred members of the Moose Legion in their lodge room in Seattle and told them about the Government's proposal to transplant Alaska moose from the Kenai to the Olympic Peninsula; he attended a special business session of the Elk's Lodge to outline the elk program of the Forester; next, he addressed sixty members of the State Sportsmen's Association, getting a lift in this by the presence of Deputy Supervisor Treen, of the Snoqualmie, who also spoke; next, Mr. Fromme regaled the members of the Gray's Harbor Rod and Gun Club in Aberdeen with a talk on the wild life on the Olympic. The week was wound up at a meeting of the settlers of the Quinault Valley.

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WEEKLY BULLETIN

Forest Service - Washington, Office

(Not for publication)

June 23, 1919.

Labor and Scientific Research

From time to time the Weekly Bulletin has given publicity to resolutions bearing directly on some activity of the Forest Service and because specific mention of the Forest Service was made in the resolutions. The following resolution, adopted at Atlantic City within the past week, does not mention the Forest Service, yet its scope is such as to include the Forest Service and any program that may result must consider us in order to fulfil the full purpose of the resolution:

"WHEREAS, scientific research and the technical application of results of research form a fundamental basis upon which the development of our industries, manufacturing, agriculture, mining, and others must rest; and

WHEREAS, the productivity of industry is greatly increased by the technical application of the results of scientific research in physics, chemistry, biology, and geology, in engineering and agriculture, and in the related sciences; and the health and well-being not only of the workers but of the whole population as well; are dependent upon advances in medicine and sanitation; so that the value of scientific advancement to the welfare of the nation is many times greater than the cost of the necessary research; and

WHEREAS, the increased productivity of industry resulting from scientific research is a most potent factor in the ever-increasing struggle of the workers to raise their standards of living, and the importance of this factor must steadily increase since there is a limit beyond which the average standard of living of the whole population cannot progress by the usual methods of readjustment, which limit can only be raised by research and the utilization of the results of research in industry; and

WHEREAS, there are numerous important and pressing problems of administration and regulation now faced by federal, state, and local governments, the wi solution of which depends upon scientific and technical research; and

WHEREAS, the war has brought home to all the nations engaged in it the overwhelming importance of science and technology to national welfare, whether wa or in peace, and not only is private initiative attempting to organize far-reachi research in these fields on a national scale, but in several countries governmental participation and support of such undertakings are already active; therefore be it

RESOLVED, by the American Federation of Labor in convention assembled, that a broad program of scientific and technical research is of major importance to the national welfare and should be fostered in every way by the Federal Government, and that the activities of the Government itself in such research should be adequately and generously supported in order that the work may be greatly strengt ened and extended; and the Secretary of the Federation is instructed to transmit copies of this resolution to the President of the United States, to the President pro tempore of the Senate, and to the Speaker of the House of Representatives."

Progress of the Reclassification Committee

More than 1,500 well defined classes of Federal workers in the District of Columbia will result from the work of the Congressional Joint Commission on Reclassification of Salaries, according to the announcement made at a recent meetir to which the supervisory officers in Washington were called.

Progress of Reclassification Committee (Cont.)

There are 104,000 Government workers in the District scattered through 38 different Departments, Bureaus, and independent establishments.

The work of the Commission divides itself into three steps. The first was the filling out of a questionnaire by each employee showing the work he is doing (or thinks he is doing). The second step, the classification of positions, is now under way. The third step will be the fixing of the wage schedule in reference to the jobs, the purpose being to provide for uniformity of salary for similar work throughout the Government service. Everyone, of course, has the hope that his particular job will on reclassification bring a higher salary. This is not necessarily so, although the probabilities are that many a position that is now underpaid in one Bureau will come on a par with every other similar position.

PERSONNEL RATINGS

The selection and promotion of men is a subject that is always of paramount interest to all members of the Forest Service organization. "Personnel Reports" without number have been written by various and sundry men, recommending promotions and assignments; giving reasons without end why all things recommended in them should be done. The majority of these things have not been done, largely because it is not possible to do them. Many of the reports in the past have, however, not been carefully analyzed and there has as a rule been no follow-up system to see what might be done with the information in the reports. Frequently one report contradicted a previous one, although made on and by the same man. One of the greatest difficulties in the past has been the "personal equation" injected by the man who makes the reports. One Supervisor's report on a man would show him to be one hundred per cent efficient; another Supervisor's report on the same man, or a man of equal ability, would show him about seventy-five per cent efficient. The men in the District and Washington offices have attempted in the past to make allowance for this personal equation; not always with very satisfactory results. Pondering over these things and with a desire to get personnel reports which would set forth clearly the capabilities and incapabilities of each man in such form th the reports would be comparable with each other and to get information on which a constructive program for each man's assignment and development might be worked out, led to the following plan of rating the men in District 2 this year:

1. We started out in an effort to rate men on fundamental qualifications rather than accomplishments. There is not much difference in the two; a man's ac complishments being determined by his qualifications, and his qualifications, whe considered in comparison with other men, being indicated largely by his accomplis ments. Considering the essential characteristics of men, however, provides a mor nearly common ground for discussion between different rating officers than does a consideration of accomplishment, because the man not connected with the immediate organization doesn't know much about the man's accomplishments, but can enter int a pretty intelligent discussion of a man's general make-up on a briefer acquaintance with him. The following points were considered in rating the men:

Education
Esprit de Corps
Energy
Judgment
Ideals
Initiative
Personality
Experience

These points were used because they were considered to include the characteristi which we need most in Forest officers. Each of the eight factors was given equal weight in the final determination of a man's value. It is not contended that the are necessarily the right factors, or are all of the factors on which a man shoul be rated, or that each of them should be given equal weight; but if they are fair representative and all men are rated by the same method, there is a fair chance that the ratings given them will be comparable.

2. Starting out then with these factors the army check list system was used in rating the men. Briefly, it consists of making up a check list of five men representing the following grades: highest, high, medium, low and lowest. Any man in the grade that is being rated, either at present in the Service or who has left the Service, may be used as a check man. Each man is then compared with the check list and given a rating for each individual subject, as determined by the check list man who is most nearly comparable to him. Individual check lists are, of course, made up for each characteristic upon which the men are rated.

3. The third departure made from the old scheme of rating was that the subject was handled by conference and no reports were written. The present personnel reports consist of tabulated sheets giving for the men in each grade the points scored by them under each of the headings. The "points" were determined by the following method: 5 points were given each man for a rating of highest, 4 for a rating of high, etc. The maximum points obtainable, therefore, would be 40. Unless there is some special reason to the contrary, the men with the highest number of points will be the first in each grade to secure a promotion. The tabulated record will indicate to the Supervisor and District Office men in what lines each man is considered strong or weak. This will enable supervising officers to render intelligent assistance by assignment or otherwise to the individual men.

4. The fourth departure from the past procedure was that the ratings were made by a number of men in conference. They were taken up at the time of the annual allotment conferences by from two to four Supervisors on adjoining Forests and one or two District Office men. The most helpful result of this was the elimination of the personal equation. Supervisor A, who has been accustomed to rate his men too high in the past, usually knows some or all of the men on adjoining Forests. He is not, as may be supposed, desirous of securing more for his men than they are entitled to in comparison with the men on other Forests, and when he has the opportunity to discuss the abilities of his men in comparison with those on adjoining Forests, there is usually no difficulty in getting him and the other Supervisors to agree on a rating for all of them.

Doubtless many faults in the scheme may be pointed out by other members of the Service; the writer can see a number, but all of those who have taken part in the rating of men in this District feel sure that we have secured something much better than we have ever had before in the way of personnel ratings and that we have a basis for a much more intelligent and comprehensive handling of the personnel problem in the District than we had in the past.

FRED MORRELL.

Michigan Forest Unique - ?

Contains largest number of commercial species of any Forest, including balsam, soft maple, hard maple, arbor vitae, black ash, ironwood, aspen or poplar, large toothed aspen, Balm of Gilead, beech, yellow birch, white birch, black cherry, American or white elm, hemlock, jack pine, tamarack, red oak, scarlet oak, white oak, white spruce, black spruce, Norway pine and white pine - 24.

(Editor's Note: This claim seems open to question, particularly as we have been told repeatedly by members of District 7 that their timber-sale business in the most complex on account of having to consider 57 or more species.)

Most accessible, as roads enable one to reach within two miles of any part of the Forest. Most easily accessible to automobile travel.

Contains largest number of individual units proclaimed - 36.

Receives least receipts.

Contains firelines constructed at the lowest cost within any forested area.

Has smallest personnel - Supervisor, Clerk, three Rangers, and two summer Guards.

Next to the Florida, the Michigan has the lowest average elevation of any Forest in the United States.

Forest types found here are not found upon any other one National Forest as indicated by the commercial species shown.

Contains the largest percentage of area in need of reforestation of any timbered forest.

Takes issue with Florida Forest that its streams never flood nor go dry.

Has the greatest uniform survival in plantations of any Forest practicing intensive reforestation.

Total labor costs per acre in establishment of plantations are lowest of any National Forest, also planting men average the largest number of trees per day per man of any Forest.

The maintenance cost for the water system at Beal Nursery is the cheapest of any Forest--a yearly rental of $18.00.

Waha Hitting the High Spots in California

In a letter received at Washington, Assistant District Forester Waha tells of his trip over the Sierras. Mr. Waha writes:

> I want to tell you of the flight I made Sunday over the southern patrol route from Mather Field, which covers portions of the Eldorado and Stanislaus Forests.
>
> I reached Mather Field Sunday morning at 7.30. After being outfitted with a leather helmet, goggles, leather coat, and gauntlet gloves, I was directed to climb aboard. As any observer, I sat in the front seat. The ship we used was a Curtis J. M. 4 with an OX5 motor. There are no controls in the front cockpit--all one does is to sit strapped to his seat.
>
> We started about 8.45. My pilot was Sergeant McKee, who is one of the flying instructors. I had heard so many times of persons becoming nauseated that I was expecting the same feeling, but at no time during the flight did I have even the symptoms.
>
> About the first impression I had was that we were practically standing still, but as a matter of fact we were traveling at 70 miles an hour.
>
> We flew directly up the American Valley to Placerville, thence in a southeasterly direction to Chinese, about ten miles southwest of Sonora. On the trip we saw five fires, all of which I later learned were outside of the Forest boundaries. The largest of these fires was not a great distance from Placerville, and had been burning for a week. We passed directly over it, and I was more than regretful that I had packed my camera in my trunk.
>
> The Sergeant had given me the map he had been using, which was about as large as my hand--a section of a small-scale State map. The Forest maps divided into squares had not as yet been completed, but were to be ready early this week. Not having been in this country previously, I was unable to locate myself with any degree of accuracy, and another handicap during the flight was not being able to converse with the pilot. There were speaking tubes for this purpose, but the pilot had not brought one with him.
>
> It seemed to me at times during the trip that we were being tossed about rather carelessly, especially when we were flying over the rugged Stanislaus River canyon. I was later informed that this was due to the fact that the pilot was endeavoring to attain an altitude of 8,000 feet, but because of my additional weight he could not rise about 6,200 feet. To insure safety and also to see the country that the patrol is to cover, an altitude of 8,000 feet or more is necessary. Being unable to attain this altitude, it was necessary to make a change in the route which had been established. At one place we were only about 200 feet above the elevation of a certain established lookout point. The country was extremely rugged, and so far as I could see a landing could not have been made without a crash. The pilot felt the same way and steered a course to the west of the peak instead of to the east, but by doing this we missed seeing some country that the patrol is expected to cover.
>
> There were ranches scattered through the country we traversed, and while a safe landing might be possible in at least some of them it would probably be difficult to make a get-away because of the small size of open fields and the roughness of the ground. In fact, Pilot McKee was somewhat concerned about whether he could make his ship rise out of the flat at Chinese, and had not previously attempted it

with a passenger. The field there is small and rather rough, but a good landing was made although in doing so the tail skid was broken. In making the descent the pilot put the ship through a series of dips which gives one a somewhat different sensation from horizontal flying.

At the field the whole countryside had congregated to see us, for this was the first flight that had been made on a Sunday. Upon landing and removing my helmet, I found that I could scarcely hear. The ringing and buzzing in my ears was a sensation I had never had before. However, the pilot by shouting made me understand that the flight we had just made had scared him more than any other trip he had ever made, simply because he could not make his ship attain the elevation necessary for relative safety, and that he would take no more passengers in the future. To do so would mean that he could not cover the established patrol route but could only cover portions of the Forest that could be seen from lookout points. When asked by one of the natives if I also had been scared, I replied that I did not know enough about flying conditions to be scared--another case of where ignorance is bliss. I must confess that I did a heap of thinking at times during the flight.

The views of the country were wonderful, and I shall never forget them. But on the return trip the haze limited our vision considerably and we could not see back into the forested country. We maintained an altitude of 5,000 to 6,000 feet during the return trip. After we had covered about half the distance, the pilot stopped the motor long enough to tell me that he was going to make a straight dip--the series of dips he had made during the morning flight were small ones, 50 to 75 feet and on an angle, but this time he shot down perpendicularly for probably 300 feet. Water and gasoline beat in my face in a fine spray. This seemed to me quite thrilling, but it was nothing compared with the tail spin he put the ship through just previous to landing at Mather Field. He had not given me previous warning, so I hardly knew what was happening except that we were diving straight down in corkscrew curves at a terrific rate, and in looking over the cockpit the earth looked like an ocean during a heavy sea. We dropped about 1,500 feet in this manner before the pilot righted the ship and then gracefully volplaned to the field within about 100 feet of the hangar where the ship is kept. Our total flying time was about four hours, and the distance covered was probably 250 miles.

Fires have already been detected from the airplanes that had not been picked up by the lookout men. There is no question in my mind that it is the most feasible method of prompt fire detection, although the expense of establishing such a patrol would be prohibitive for the Forest Service. While we used about 36 gallons of gasoline for the flight, it is estimated that the cost of making such a flight is about $250--this is mostly depreciation.

The ships used for this purpose should by all means be equipped with radio telephones or the audio frequency wireless telephone sets, and, of course, the necessary ground stations should be established.

In a rugged mountainous country, the expense involved in preparing suitable landing places, for the sake of safety if for no other reason, would be prohibitive. I am now more than ever convinced that the dirigible with helium gas will be the type of ship we shall use in the future, and I predict (everybody who makes a flight must make some prediction) that within five years our present system of lookout patrol will be largely a thing of the past, and also that suppression of fires will commence immediately after discovery. In other words, the suppression forces will accompany the observer in a dirigible, and when a fire is discovered one or more men will climb down and put it out. There will then be different methods of suppression of fires than those now used. It will probably be possible to carry large tanks of water and use motors to pump it on fires; or chemicals of one kind or another may be used.

Photographic maps should, in my opinion, be considered an essential to the successful use of aircraft in fire detection. The use of maps of the Forests divided into squares, when fires are reported by the number of the square in which it occurs, for example, D 12, is quite satisfactory when the pilot knows the country. There are now four or more pilots doing the forest patrol from Mather Field, each one making a flight every other day. As time goes on, these pilots, who are now flying instructors, will possibly be moved to other flying schools. In other words, the personnel will be subject to change from time to time. Especially in view of

Waha Hitting the High Spots in California (Cont.)

such conditions, photographic maps would be preferable to any other kind. This matter was taken up with officers of the Air Service before I left Washington. But in the absence of photographic maps, type maps, if fairly accurate and showing merchantable timber, woodland and brush areas, would be very helpful to the observer and would probably make for accuracy in reporting the location. So far, however, we can surely not complain of inaccurate reports, for I understand that all fires which have been reported were within a mile or less of their accurate location.

Reforestation Work in Massachusetts

More than 2,000,000 evergreen trees, raised in the state nurseries, have been set out in Massachusetts this year under the direction of the State Forester. This is the largest number ever planted in this State in a single year, and the interest in reforestation is the greatest ever shown, in spite of the fact that labor and trees have been more expensive than ever before.

The State Forester believes that but for the war and other setbacks, the State would have been planting at least 10,000,000 trees a year by this time. With the diminishing lumber supply and the opportunities of utilizing the potential possibilities of waste lands, the State has a real chance to do something that will eventually aid in refilling the State's treasury. Lumbermen generally are very much interested and now the general public is awakening to forestry matters and th State Forester is doing all in his power to drive this home to the people.

Development of National Water Resources

The development of the national water resources of the United States is a matter of great interest to Forest officers, because any plan that may finally be adopted must tie up with the water resources in the National Forests.

The Chamber of Commerce of the State of New York has had a special committee at work studying the problem. Some of the recommendations are of particular terest. In its report the committee says that for the years ahead there will be keen competition for foreign trade, and that it is essential for the manufacturers to establish the greatest economies and the most efficient methods possible to be able to secure and hold a substantial share of world trade. The following excerp from the report bear directly on this question:

"One of the most potent elements in production is power."

One of the most neglected natural resources in the United States is the undeveloped water power flowing in all directions from the many streams and river in the country. Mounting costs of coal and labor in operating steam plants have added heavily to the cost of production of commodities in the past few years. S foreign countries have been very much more progressive than the United States in the development and uses of their streams. In Switzerland almost every mountain torrent has its electric plant, the current often being carried for many miles f lighting and power purposes.

The great expanse of the United States, its political composition with State boundaries, differing State laws and States' rights, almost necessarily mak this a Federal and national question if it is to be dealt with comprehensively, scientifically, and with a maximum benefit for all.

The first essential is a rational fixed policy of conservation and develo ment under a continuing businesslike administration.

To establish that there should be passed by the Federal Government a constructive act sufficiently flexible to be adapted to the differing conditions throughout the country.

The essential points for consideration are:

1. An inventory of the natural water resources of the nation.
2. A national policy for their utilization.
3. Apportionment of income and expenditures relating thereto.
4. Continuity of plan and of administration.
5. Details and order of development.
6. Plan and estimate of cost of each complete project.

The former wasteful, inconsistent, and fluctuating expenditures under what has been known as the rivers and harbors policy should be abandoned.

A Federal commission of small number should be appointed with a sufficient appropriation to provide it with a proper technical staff to carry on investigations, to plan development, and to report to Congress on the subjects above referred to.

The terms of the members of this commission should, like the members of the Federal Reserve Board, be classified so as to preserve a continuity of policy and purpose.

Such a plan ought to secure the support of the Nation as a whole.

The study by such a commission must include the control of watersheds for potable purposes; the recovering of desert and waste lands by irrigation and tree planting and of swamp lands by drainage; the protection of watersheds and rivers from pollution; the revision and codification of water laws; the passage of new laws coordinating Federal and State jurisdiction.

The controversy between States' rights and Federal control as to boundary or navigable streams is not yet settled and probably can not be until the problem has been very carefully studied and issues joined so as to obtain a final determination by the Supreme Court of the United States; and that court has already held in the case of Chandler-Dunbar Water Power Co. that the flow of a navigable stream was in no sense the property of the owner of the adjacent land or of the owner of the bed of the river.

No accurate estimate of the total amount of hydraulic power is obtainable, but the figure probably most frequently used for all the water power in the United States is 60,000,000 horsepower. The United States census in 1912 gave only 4,870,000 horsepower as developed, and the report of the Secretary of Agriculture, January, 1916, estimated that the developed horsepower has been increased to six and a half millions.

It has been frequently pointed out that as the Nation's coal supply is depleted the cost of coal must rise, thus increasing the cost of steam and electric power as a competitor and raising the market value of hydroelectric power accordingly.

Next to power, cheap transportation will be one of the most potential aids in economy of marketing the productions of the United States both at home and in foreign trade. Coordination between rail and water transportation and perfect cooperation between them is essential to true economy. Heretofore there has been no coordination, but on the contrary discrimination against water routes by rail systems.

It was well said in a recent newspaper article on waterways: 'Other nations find well-planned waterways useful as part of a national transportation system; it seems that we should, but there must be some competent body to do the planning.'

Without a competent and comprehensive plan the securing of coordinated result in any line of endeavor is impossible.

To translate rainfall into terms of energy, to harness together rivers, lakes, streams, and canals for transportation; to interlock water power and stream through transmission lines for light, heat, and power, are questions of immediate importance which call for the elaboration of a scheme of operation. Energy is recognized today as the basic factor of our present economic civilization. In material part it has its genesis in the rainfall. When we consider the practical side of 'economic power and transportation', we must take into consideration a policy conditioned upon the meteorological, geological, and geographical conditions of the different states. Legislation must be enacted free from political bias and private corporate influence. Such legislation can be accomplished only by the Nation, with the State and the individual working in harmony to produce coordinated statutes.

All sections of the country--East and West, North and South--should be bound together through the understanding and use of energy, in a balanced plan for the conservation of the resources of the Nation. The policy of the expediency of the moment and the consideration of only local interests which has heretofore prevailed, must be abandoned; and the new economic policy must be that of a business administration under scientific and technical direction. The old policy was larg the result of the careless use of the wonderful resources of the country, which required little effort to develop and to utilize; but now, because of increasing population and the tendency to concentrate in great centers, the time has come for the scientific treatment of the economic problem as a big business proposition.

Perhaps the greatest asset of the country is the rainfall, which varies in the humid, arid, and semiarid states; and the problem of each group is different--whether it is the recovery of arid lands by irrigation, the protection of streamflow by reservoirs, or the development of hydroelectric power through these storage reservoirs; or in other ways, as the canalization of rivers and canal links connecting the various bodies of water, forestry, protection against pollution, and the potable and domestic use of water. Each of these problems has its interests with its Representatives in Congress. But no one of these interests can rightly expect to secure the support and appropriation it needs unless it recognizes the possibilities and potentialities of the others; and for that reason it is absolutely essential, if real progress is to be made, that there shall be cooperation under intelligent direction."

Washington Notes

With deep regret announcement is made of the death of George E. King on June 21, at Washington. Mr. King entered the Forest Service on March 1, 1904, and was a member of the Office of Accounts during the whole of his connection with the Service. His loyalty to the organization and kindly consideration for his fellow workers will be long remembered.

Forest Products Laboratory Notes

T. R. C. Wilson and J. S. Mathewson are on a cruise down the Mississippi, around the coast to Florida and up through the Carolinas, on the hunt for 30,000 feet of bald cypress for experimental use in kiln-drying. D. G. White starts soon for a similar hunt for yellow poplar and ash.

One thousand copies of H. S. Betts' article on the grading of structural timbers have been made available by the American Lumberman for distribution by the Laboratory. These reprints will come in handy to meet the constant call for this article.

E. M. Richards, Section of Inspection and Test, Division of Operation, U. S. Railroad Administration, visited the Laboratory recently to investigate a differentiating machine designed by Armin Elmendorf, and incidentally to get a general idea of the work of the Laboratory, in order to report to his superiors more completely about its aims and purposes.

"The course at Madison has so opened my eyes that I deem it necessary to install new kilns immediately," says a recent letter from the superintendent of a large chair factory in Chicago who attended the last kiln-drying course at the Laboratory. Previous to his visit this man was satisfied that there was no "kiln-drying" problem in his factory and that the stock turned out by his company's kilns was satisfactory for high-grade work.

The Laboratory has just received two 32-foot Douglas fir logs from Washington County, Oregon. These have been sawed into 16-foot lengths and are now on the skids. Two more logs of about the same size are en route. They are all to be used for further kiln-drying strength tests. The shipment totals 2,492 feet board measure and was secured for us by District 6 at a price of $25 per M., plus $5 per M. loading charge, f.o.b., Timber, Oregon.

Ten men from the Naval Training School at Great Lakes are now at the Laboratory for a three-weeks' course in the mechanical properties, drying, and gluing of wood. These men are the instructors who will train aircraft repair men for the Navy. A representative from Great Lakes recently spent several days at the Laboratory gathering material for textbooks to be used by these men in their instructional work.

At the present time large quantities of yellow pine chips are produced in the extracted distillation of turpentine and the solvent extraction of pine oil and rosin. These chips are utilized for fuel and any excess over fuel requirements is a great waste. That such chips can be made into a fair grade of pulp suitable for making kraft paper or container board has been demonstrated by recent experiments at the Laboratory. Only the largest chips should be used, in order to avoid dust, shives, and small chips, which consume chemicals and yield only a small percentage of pulp. The wood should be shipped at the extraction plant in the largest sized pieces compatible with proper extraction. Proper screening of the extracted chips before pulping will be a decided help. It is also important not to tender or burn the chips in the preliminary steam distillation process.

District 2 - Rocky Mountain District

Bids for the denudation of one of the watershed areas at Wagon Wheel Gap Experiment Station have recently been let and 200 acres will be cleared of timber at the cost of $5,800.00. Data have been collected at this station for the past nine years on two adjoining tracts of timberland for the purpose of determining the relative runoff and other meteorological factors governing timbered watersheds. One of these areas is now to be cut clean and the experiment continued for another nine years in order to determine the results of deforestation.

The severe frost experienced in Colorado on the night of June 1 resulted in marked damage to the new growth on practically all the Douglas Fir transplants in the Monument Nursery of the Pike National Forest. Seedlings, however, were saved by covering them with seed sheets, which was no small job, considering the large area of such plants under cultivation. The temperature at the nursery on the first night of June fell to 22° F., which is the lowest record ever known in the State for this month.

At a recent meeting of the Saguache Park Association, a committee was appointed to draft resolutions requesting Congress to include within the National Forest boundaries all public grazing lands in the San Louis Valley lying to the east of the Cochetopa National Forest, in order that the Service might regulate grazing on this area.

A new plan in connection with the allotment of funds to the National Forest of the District is to be inaugurated this year. Heretofore, letters of authorization have been sent each Supervisor giving instructions as to tho transfer and handling of Forest allotments. This year, brief instructions regarding these matters will be mimiographed on cards of the same size as the regular account cards and will be filed in the Supervisor's office in the standard allotment card boxes. Th plan will, it is hoped, make the instructions more radily available and prevent their being overlooked.

The Colorado State Livestock Association is endeavoring to organize all th stock interests of the State into one central body, under the scheme effectively carried out in California. At the present time, stockmen are divided into State, County, and local organizations, all working more or less individually. Under the new plan, the County organizations are to be continued, but will consist solely of a Board of Directors, one of whom will be elected by each local organization of th county. This Board of Directors will, in turn, elect a member to represent them the State organization, which will be a central clearing house for all stock interests of Colorado. Since a great number of the livestock owners who will be included in this organization are Forest users, it will undoubtedly be possible for the Forest Service to recognize the State Association and deal directly with it.

For some time Forest Clerk Neeper has acted as "relief clerk." When a vacancy has occurred in the Forest clerk position, he has been detailed to the Forest to fill the gap and train the new clerk. A new scheme has been inaugurated which may ultimately do away with this position. It is now planned to train one two substitute clerks on some of the regular Forests; these men to be put throug a program of development and routine training which will fit them to step into a regular clerk's position. The first two assistant clerks to work under this sch will be given instruction in the office of the Pike and Bighorn National Forests.

Motion pictures houses to the number of 142 have expressed a willingness to run for the period from June 1 to October 31 two slides--a forest protection a recreational slide--in cooperation with the Forest Service. It is felt that t means of publicity will reach thousands of people.

A State-wide approval of the weekly fishing bulletins issued by the Fore Service has come. Nothing this District has done for years has so captured the public and aroused their interest. These bulletins are based on weekly reports from the field officers and their value comes from the fact that the bulletins are based on original information. Request has come from prominent officials in Wyoming for a similar bulletin and this service will be inaugurated at an early date. The bulletins are released for publication in the Friday papers in time for the week end fishing trips.

District 3 - Southwestern District

A revised layout of the north shore group of summer residence lots and camp grounds at Lake Mary on the Coconino has been made by Forest Examiner Gill and Ranger Adams.

Flagstaff's city park, which is under permit from the Forest Service on the Coconino, is to be developed along a definite working plan to be worked out in cooperation with the Forest Service.

Ranger Pincetl, of the Santa Fe Forest, sends the following data covering the operation of a portable mill getting its power from a coal-oil engine. The engine is rated at 22 H. P., consumes 20 gallons of coal oil, 1 pint of lubricant, and 52 gallons of water in a run of ten hours. The engine, mandrel, and saw carriage cost $1,750 f.o.b. Albuquerque, and weigh 10,000 pounds, of which 5,000 pou is in the engine. The engine is mounted on a steel carriage with wheels and remains on the wheels during operation. Four horses will move the engine over any road, and the sawmill crew can tear up, move a reasonable distance, and set up ag within three days. The capacity of the rig is 500 feet per hour. The best size saw for this rig is 48" and 32 teeth, at 590 revolutions per minute. The life of the engine is estimated at four years with an expense for upkeep of $100 per yea Gasoline is used to start with and when the engine is warmed up coal oil is swit on.

J. O. Veatch, of the Bureau of Soils, is making an intensive survey of soils on experimental areas at the Fort Valley Experiment Station, which will c representative areas in all the forest types. Very detailed soil maps will be m for planting areas and sample plots in the yellow pine type. The studies alrea seem to indicate that the heavy clay soils, when occurring near the surface, are adverse to reproduction.

District 4 - Intermountain District

The merits of spring steel coil wire for fencing purposes are advanced Supervisor Raphael in a recent letter, excerps from which follow:

"From my recent observation of a fence built with this wire at the Pio Ranger Station at an elevation between 9,000 and 10,000 feet, I am thoroughly c vinced that this is the only class of wire to use for fencing at high elevatio

Two years ago the pasture fence at this Station was rebuilt with five strands of spring steel coil wire and three wire fence stays to the rod. I hav just returned from this station where I helped repair the fence and found it br in only two places. Many of the staples were of course pulled out, but after t snow melted the wires came back to their original place and tension. What woul have happened had the wires been stapled so tightly as to have made it impossi for the staples to have pulled out is, of course, problematical. I believe, h ever, that the results would have been practically as good as where the staple pulled out. At any rate, my observation and experience with barb wire has bee that it breaks very frequently even where staples pull out."

District 5 - California District

The possibilities of Stanislaus scenery have been discovered by a co cial film company, and a crew of thirty people are on the spot bottling the scenery. A second company of seventy-five people is expected in a few weeks, which seems to indicate that there will be considerable competition with the se al stunts now going on in this neck of the woods.

District 6 - North Pacific District

More trouble for the Property Clerk comes from the Cascade Forest, and another kink put into the scheme of standardization of equipment and lessening the number of property items. Carrier pigeons are the trouble makers. The pigeons wil be used to carry reports from the fire front to headquarters.

District 7 - Eastern District

District Forester Reed has left Washington for a field trip which will take him to the White Mountains. In connection with this field trip Mr. Reed will represent the Forest Service at the two-days' field trip planned by the Woodlands Section of the Pulp and Paper Association of Canada. Under the auspices of this association, the Quebec Government Nurseries at Berthier, and those of the Laurentide Company will be visited. Later Mr. Reed will make an address at the celebration of the one-hundredth anniversary of the building of the Crawford bridle path up Mt. Washington.

I. F. Eldridge has reached Washington, ready to assume the duties of his new job of Assistant District Forester in charge of Silviculture. Mr. Eldridge just now is very busy with the interesting job of trying to find a place to store away his family. There is not yet an excess of available houses.

WEEKLY BULLETIN

Forest Service - Washington Office

(Not for publication)

June 30, 1919.

EXPANSION OF LUMBER EXPORTS DANGEROUS TO HOME INDUSTRIES UNLESS FORESTRY IS PRACTICED

The following summary covers the main points of an interview by Colonel Graves with a number of Washington correspondents. A fuller presentation of this subject is to be found in a circular just off the press entitled "Lumber Exports and Our Forests."

The exportation of American lumber on the scale likely to result from the European demand for material will, unless accompanied by provision for regrowth, seriously deplete the supplies needed by home industries and impose hardships on the consuming public here.

The Forest Service has just issued a pamphlet warning the wood-using industries, the lumbermen, and all interested in home supplies of forest products or foreign trade in them, that the question of lumber exports can not safely be left to the care of itself. The situation is especially critical with certain of our highest grade woods, such as ash, oak, hickory, yellow poplar, and black walnut, which are the support of important industries such as those producing furniture, vehicles, and farm implements, and with southern yellow pine, of which the main bulk of the supply is approaching exhaustion and which is likely to be exported in large quantities to meet after-the-war demands.

The situation is one of ominous possibilities. Most of the leading industrial nations of the world, whether lightly wooded and dependent upon imports or heavily wooded and exporters, are taking steps to safeguard and develop their timber resources. The United States alone appears to be content to build up a great export trade without considering the ultimate effect upon domestic timber resources and their capacity in the future to supply the home market.

Sound public policy does not, however, necessarily demand the discouragement of exports. The United States, standing second among the countries of the world in forest area and producing more than half of the sawed lumber, should play a more important part in the export trade of the world than it does now. With proper safeguards in the war of maintaining the raw materials, a strong export trade should be encouraged. But the gains which we may make in the markets of the world can be kept only in so far as they are based on a permanent supply of timber. If they are to be based merely on a cut which, as in the case of the old-growth southern pine, will not supply even our own domestic needs for more than the next 10 or 15 years, we shall soon be crowded out of the foreign markets by countries which base their export trade on a continuous self-perpetuating resource.

The General Foreign Trade Situation

Before the war we were exporting 3½ billion board feet of lumber and sawlogs, nearly half of which was southern yellow pine and more than one-fifth hardwoods. This was about 10 per cent of our total cut. It was partly offset by importations - 1-1/5 billion feet of lumber and logs, a billion cords of pulpwood, 895 million shingles, and 565 million lath, imported from Canada; 1,140,000,000 pounds of wood pulp and 600 million pounds of book, newsprint, and wrapping papers, imported from Canada and various European countries, and in addition many other articles and products derived from wood. Europe's emergency need for lumber, above its consumption in normal times, is put at about 7 billion feet of lumber a year for the near future, on a conservative estimate; and her own forests have been depleted by the war.

The General Foreign Trade Situation (Cont.)

Europe needs cheap lumber above all, and our product will not be attractive for the principal needs of reconstruction. Nevertheless, the world situation in lumber offers an undoubted opportunity for a permanent export trade from this country of proportions that would seem to be limited only by our own powers to sustain the production of saw material. The pre-war deficiency in wood which was supplied the nations of western Europe by Russia, the United States, Canada, Sweden, Austria-Hungary, and a few others, amounted to about 16 billion board feet per year, and represented a value of close to $600,000,000. This deficiency, because of the tendencies toward industrialization, will become greater as time goes on.

The leading countries of Europe must continue to be large importers of timber. In Europe only Russia, Finland, and Sweden can increase their timber exports without lessening their forest capital. Of the other parts of the world still possessing vast timber areas most are lagging in development and their forest resources remain largely inaccessible and do not contain the common softwoods, the chief stable timber product of international trade.

Our Forest Supplies

The relation of our forest supplies to the export problem can not be judged on the basis of the total amount of timber in the country. Regional depletion and the failure of available supplies for American wood-using industries dependent on special classes of material are serious dangers of the relatively near future. Europe will look first to our eastern states for lumber.

Our valuable naval stores industry is in danger, for unless the turpentine industry is placed on a permanent basis, as it is in France, the leadership which the United States possesses because of the abundant supply of longleaf pine timber will soon pass to France.

According to recent reports hickory is very scarce. The present heavy calls for ash, oak, and yellow poplar have produced a condition approaching famine at many mills. At the same time the lumber trade journals report that there is an enormous demand for hardwoods in Europe.

There are a great many wood-using concerns that can not point to five years' supply of raw material of which they are certain. They can not contemplate with much satisfaction a policy of exports that will cause foreign competition for raw material tributary to their plants. The American wood-using industries, which give employment to American workmen and to American capital, export annually $130,000,000 worth of products manufactured partly from lumber. This is in excess of the value of the lumber export itself.

What a Sound Public Policy Requires

Is it a wise policy to attempt to develop extensive markets for hardwood lumber at a time when our forests, as now handled, will be able to produce barely enough for our own industries? Are we not by such a policy helping foreign industries and workmen at the expense of our own? Obviously the answer is to stop the present forest destruction, and to produce by growth enough both for our own needs and for a healthy foreign trade.

The forests supplying the material for export are almost wholly privately owned. There is no effort to secure replacement after cutting. Local exhaustion of the forests is leaving great stretches of land in an unproductive condition, resulting in virtual impoverishment, if not depopulation, of very considerable areas.

Such a situation is unnecessary. It exists because the public is unconscious of the economic danger that is clearly menacing its interests. The public must take cognizance of the dissipation of our public wealth and insist on the use of constructive methods of handling forests instead of destructive exploitation.

The character of the forestry problem is such that results can be secured only through the participation, cooperation, and direction of the public in a much more far-reaching degree than has heretofore been undertaken. It will be necessary that the public, through appropriate legal and administrative measures, insist upon adequate forest protection and the use of such methods of cutting as will ma

What a Sound Public Policy Requires (Cont.)

possible forest replacement by natural reproduction. At the same time the public must liberally assist the owners in such measures as are necessary to make good forest handling a feasible matter.

Such a policy, coupled with a broad policy of public acquisition of forests--National, State, and municipal--would make safe and wise the encouragement in a large way of the export of lumber and other forest products.

The New Appropriation Bill

The Bill making appropriation for the Department of Agriculture for the fiscal year ending June 30, 1920, has passed both Houses of Congress and now awaits the signature of the President.

The Bill carries a total of $31,691,562, of which amount the Forest Service gets $5,966,869.

Of interest to members of the Forest Service are the following items:

Of the greatest importance is the increase of $266,074 for the various Forest allotments. This is the only increase obtained.

The building limitation has been raised to $800, a change from the present limitation of $650.

Authorization is given for the payment of awards for information leading to arrest and conviction for violation of the laws and regulations relating to fires in or near National Forests, or for the unlawful taking of, or injury to, Government property.

The purchase of law books is authorized.

For fighting and preventing forest fires and for other unforeseen emergencies, $150,000.

The purchase of the Michigan Nursery Site at not to exceed a cost of $200.

For investigation of wood distillation, testing, paper, etc., $173,260--no increase.

For estimating and appraising timber and other resources, $80,000--no increase.

For the construction and maintenance of permanent improvements, etc., $450,000--no increase.

For purchase of land under the Weeks Law provision $600,000 was appropriated, as against the request for $2,000,000.

Mileage is to be allowed at the rate of 3 cents for motorcycles and 7 cents for automobiles, as against the present 2½ cent and 6-cent rates.

Why He Left the Forest Service

W. H. Gallaher, Forest Examiner in District 5, has resigned from the Forest Service, after being a member since July 1, 1910.

Mr. Gallaher very kindly responded to the Department's request that members resigning indicate the reasons for resigning. The information submitted is to the effect that Mr. Gallaher felt constrained to resign his $1,700 job in the Forest Service to accept a job with the Standard Oil at $4,200 per annum plus a $6 per day quarters' allowance.

Apparently Mr. Gallaher overlooked the $240 bonus that he would have received beginning July 1.

Forest Service Exhibits in France

C. A. Lindstrom, the Forest Service representative in charge of the exhibits sent over to France for the A. E. F., writes that:--

"The section of the exhibit in my charge was officially opened on Monday, May 26, with some ceremony. The faculty and students of the College of Agriculture gathered in one of the halls and the president and others made complimentary speeches concerning the exhibit, to which I replied on behalf of the Department. I failed to mention that this is the A.E.F. University Camp at Bauner.

To date, this is the only section of the exhibits which has been installed for exhibition. One section is now at Le Mans and should be installed by tomorrow. Another section is at Brest, but a place in which to install it has not yet

Forest Service Exhibits in France (Cont.)

been found. The fourth is on the way to Bordeaux, where it should be installed by tomorrow or Sunday. After the exhibits were finally located at St. Nazaire and Bordeaux, they were shipped immediately to the four points at which they are now located, but rail shipment is even slower here than in the United States, and this section did not arrive until the 22nd. A place was in readiness for it and it was installed immediately. No place could be secured in Le Mans until the 27th. The section now on the way to Bordeaux was transshipped from Allerey, when it was learned that that camp was to be abandoned and therefore has been about three weeks en route.

It is unfortunate that the shipment of these exhibits has been so badly handled, since the interest shown by the men here since the arrival of the exhibit has been very keen. There is at the University here a College of Agriculture, and about 25 kilometers from here is a farm school of some 3,000 students. It is, of course, natural that these should be interested in the exhibit and spend considerable time in it, but it is also interesting the other men at the camp, because, I believe, it is an entertainment so different from what they are used to. The one thing they all think most seriously about, of course, is when they are to get back home, but they are more serious men than when they left the United States and most of them seem to be only too glad of an opportunity to get information which may help them when they get home. There is an exceptionally high class of men here and the statement above may not hold true at other camps.

The French people have been coming to the exhibit in large numbers and are very curious, thorough in their examination, and ask many questions. I have interpreters present at times, otherwise gesticulations go a long way.

The exhibit will remain at the University until it closes on June 7, when it is scheduled to be sent to the Third Army at Coblenz.

Transportation back home has been applied for on some boat leaving about June 15, which should bring me to Washington by June 30 at the latest. Have nothing definite as to whether or not transportation can be had at that time, so it is possible that we may not be able to get back then. The Army makes allotment of space on boats, and there seems to be no way of hurrying the Army.

Very sincerely yours,
(Signed) C. A. LINDSTROM.

Automobiles and Fire Protection

The automobile will play a very important part in forest fire protection work, as planned for the coming season by the Washington Forest Fire Association. Forty of the patrolmen have already been provided with machines and it is expected that additional machines will be put into use before the fire season gets well under way. The Association now has ninety-four rangers and patrolmen in the field and expects to put on fifty additional men under the Weeks Law. The total area under patrol is 3,675,000 acres. These figures should be of interest to members of the Forest Service, particularly in trying to make comparison as to the number of of Government machines provided for patrolmen.

Yellow Pine Price Troubles in England

That the English Controller of Timber Supplies is dissatisfied with high prices for yellow pine in England is indicated by a consular telegram received in this country. It appears that announcement was to the effect that if the excessive prices continued he would dispose of Government stocks direct to consumers at prices not higher than the maximum price set up March 31, which apparently is being exceeded by the dealers.

Forest and Lumber Conditions in Norway and Sweden

Axel H. Oxholm, one of the trade commissioners who studied lumber conditions abroad, was a recent caller at the Atlantic Building. Mr. Oxholm visited Norway, Sweden, and Finland. He states that those countries, in line with similar action of the other foreign countries, are looking very carefully after their export trade, and are conserving their resources.

Forest and Lumber Conditions in Norway and Sweden (Cont.)

Sweden, which has abundant forests, instead of encouraging a great foreign trade, is a dopting measures of restriction. The conclusion is drawn by Mr. Oxholm that it would be a serious mistake for the United States to encourage an extensive export trade without having first determined on a definite policy for the handling of forest lands with some consideration for the future in this country.

Further Effusions

During the month of June the following Forest Service articles have been reviewed and submitted for the approval of the Secretary's office:

Title	Author	Place of Publication
Ethyl Alcohol from Waste Sulphite Liquor. I. A Study of Fermentation Procedures.	E. C. Sherrard and G. W. Blanco	Paper, and other trade journals
Failure of Factory Roof Beam Due to "Compression" Wood	G. E. Heck	Technical journals
Supplies and Production of Woods Used in the Construction of Aircraft	W. N. Sparhawk	Turned over to the Advisory Committee on Aeronautics for publications in the series of monographs contributed by the Forest Service
A Study of the Effect of Kiln Drying on the Strength of Wood, with Special Reference to Airplane Woods	T. R. C. Wilson	"
Built-Up Wood	O. M. Butler	Technical and Trade Journals
The Effect of Kiln-drying on the Strength of Commercial White Ash	H. J. Rosenthal	Technical journals
Packing Methods and Containers as Business Factors	A. F. McDuffie	Technical journals
Quantity of Wood Treated and Preservatives Used in the U.S. in 1918	R. K. Helphenstine, Jr.	Annual Proceedings American Wood Preservers' Assn.
Automatic Regulation of Temperature and Relative Humidity in Factories	A. C. Knauss	Technical journals
The Effect of Fertilization on the Seed of Jeffrey Pine	E. N. Munns	The Plant World
Utilization of Walnut During the War	W. D. Brush	Lumber journals
Research Problems in Airplane Propeller Manufacture	A. L. Heim	Technical journals
The Relation of the Moisture Content of Wood and Rate of Drying to the Humidity of the Surrounding Atmosphere	Arthur Koehler	" "
Development of a 15-foot Airplane Wing Rib	Raymond M. Wirka	" "

Further Effusions (Cont.)

Title	Author	Place of Publication
The Determination of the Moisture Content of Woods at Different Humidities	M. E. Dunlap	Technical journals
Tests on Thin Plywood as a Substitute for Linen in Airplane Construction	Armin Elmendorf	" "
Selecting Wood for Use in Airplanes	Arthur Koehler	" "
Technical Considerations Involved in Design of Hollow Interplane Struts	Armin Elmendorf	" "
Strength Tests on 55-Inch to 96-Inch Wing Ribs, and Design Recommendations Based on the Tests	" "	" "
Comparative Merits of Different Types of Splices for Airplane Wing Beams	H. D. Frary	By National Advisory Committee for Aeronautics
The Mechanical Properties of Plywood compared with those of Ordinary Boards	Armin Elmendorf	Technical journals
The Nailing of Boxes	J. A. Newlin	Technical journals
Tests on Hollow Interplane Airplane Struts	Armin Elmendorf	" "
Walnut Silviculture	F. S. Baker	American Forestry
Testing Airplane Wings for Strength	Armin Elmendorf	Technical journals

Government Employees Mutual Relief Association

Mr. Field Man! How about that little membership in the Government Employees Mutual Relief Association?

You can't be forced to protect yourself and your family, but perhaps you can be begged into doing it. What say you?

Washington Notes

Roy Headley has left Washington headed for Missoula where he will have a chance to turn a hand, as reports of forest fires are coming from Montana.

D. G. White dropped in on us at the Atlantic Building just long enough to tell of his success in his scouting expedition for special material for Laboratory use.

T. Hoyt Weber has resigned from the Service. Mr. Weber is just now out on the West Coast, but expects to return shortly to the East and hang out his shingle as consulting forester. Mr. Weber spent most of the past two years with the Forest Service on special war details.

W. R. Chapline has left Washington for an extended field trip, and we do not expect to see him in Washington until next October. Mr. Chapline will spend most of his time in the Southwestern District.

Lieutenant Percy J. Paxton, who has for the past two years been in military service in the artillery branch of the service, has returned from overseas. Lieutenant Paxton got into the game at the start but was not able to get to France until within the last year.

Forest Products Laboratory Notes

Considerable important equipment has been purchased recently. At the Old Soils Building a deep well pump will be installed, which will draw water from the 180-foot well located there to supply the needs of the photographic department and the conditioning rooms in the old and new Soils Buildings. During the winter lake water was used, but this is now too warm and dirty for use. Installation of this equipment is under the direction of Messrs. Nelson and Heim.

A large hydraulic veneer press has been secured to replace the old screw press now in use in the Section of Preservation. With the present equipment it is impossible to exert even pressure upon veneer panels and much of the unsatisfactory gluing has been caused thereby.

The Forest Products Club had a specially interesting session last week. Mr. Wells spoke on the work of the Laboratory in the development of wood pulp for the manufacture of smokeless powder during the war. Samples were exhibited and explanations made of the manufacture of powder.

The session was also a farewell party to Messrs. Johnston and Ancona, who will leave the Laboratory, Mr. Johnston going to San Francisco as Assistant District Forester in charge of Operation and Mr. Ancona returning to Albuquerque.

Messrs. Hicks, Allen, and Bateman made a two-days' experimental-tie inspe inspection trip to Janesville and Hartford. Messrs. Allen and MacLean are in Minneapolis to inspect the Forest Service experimental wood block pavement in that city.

Packing boxes showing the workings of the insect timber borer will not be allowed to enter Australian ports if the Federal Director of Quarantine at Melbourne can prevent it. Shippers have been warned not to pack and ship goods in cases presenting evidence that wood-boring insects are or have been present.

District 1 - Northern District

The fire season opened on the Sioux Forest on June 7 with a 50-acre crown fire on the Ekalaka Division. Seventy men were employed and the fire was brought under control in about four hours. The cost is estimated at $250.00. The fire is believed to have originated from camp fires left by wood haulers. It has been exceptionally dry for the past month in the vicinity of the Forest, and the fire danger is fast becoming acute.

Ranger Lew Brundige, of the Nezperce National Forest, resigned from the Service on June 15th. Mr. Brundige, after completing ten years of loyal service is resigning to manage a large cattle outfit on the Salmon River adjacent to the Forest. As an experienced and practical stockman, we expect Brundige to be very successful in his new work, and will be glad to see him as representative for one of our permittees.

J. W. Girard spent about 10 days with the timber survey crew on the Blackfeet. From there he goes to the Coeur d'Alene to assist in marking a timber sale boundary on Lieberg Creek.

Spotted fever caused the death of Grover Caldwell, a cook employed by the Forest Service trail crew in the Bitterroot Valley. The crew was located on the West Fork of the Bitterroot River below Darby, a region supposed to be free from tick infestation. Eight days after being bitten Mr. Caldwell was taken ill very suddenly and died in the hospital at Hamilton, where he was conveyed for treatment.

District 2 - Rocky Mountain District

Lieutenant R. J. Pilcher is listed as one of the participating pilots in the aerial forest patrol from March Field, Calif. Lieutenant Pilcher was Forest ranger on the Black Hills Forest for several years. He attended the second officers' training camp at Fort Snelling, and since then has been in the Aviation Service and now has a chance to put to good use his fire detection and fighting experience in a new and interesting field.

The Rocky Mountain portions of the District in general are very much in need of rain both from the standpoint of fire protection and the condition of th grazing ranges. In Wyoming, in the vicinity of the Forests and extending into

District 2 - Rocky Mountain District

Montana, a drouth which is the worst in years is being experienced. Local areas on the eastern slope of Colorado are as seriously affected, particularly the Colorado National Forest. On the western slope in Colorado, a backward spring followed by a rather dry spell, recently broken, has resulted in not any too good range conditions.

James Silver, Biological Assistant, has made a report to the District Office that the plan developed this spring of organizing short, intensive campaigns with the Forest Service to clean up areas on the Forests where the Biological Survey has destroyed the major portion of the prairie dogs, has been put into effect with gratifying results. Work was carried on on two districts of the Pike, two on the Leadville, various sections of the Cochetopa and small areas on the Durango, San Isabel and Rio Grande Forests. Mr. Silver summarizes his report as follows:

> "With the interest and cooperation of the Forest Service in the work of prairie-dog extermination on the Forests, it will be possible to keep the Forests free of dogs at little effort and expense. During the present campaign on the Pike, Leadville, and Cochetopa Forests, a total of 3,505 quarts of bait was distributed on an area of approximately 21,000 acres treated with poison bait. Outside the cost of the poison bait, the whole was accomplished with little cost or effort to anyone. To have covered the same area without this cooperation would have cost the Biological Survey between $1,000 and $2,000."

Professor McDonald of the Ames Forestry School arrived in Denver on the 17 with fourteen students whom he desires to locate on one of the National Forests for summer camp and school. They proceeded to Fraser and established camp near the Byers Ranger Station on the Arapaho Forest. Prof. McDonald desired a location where he could instruct students in estimating, mapping, marking, scaling, mensuration, and manufacturing. Good examples of all of the different steps in logging and manufacture are to be had in the vicinity of Fraser and the Arapaho Forest will cooperate with Prof. McDonald in arranging for the students to learn Forest Service procedure along with these and other lines. A temporary telephone will be placed at the camp in order that the boys may be secured quickly in case of fire. Unless it rains soon, it is quite likely that experience in fighting fire will be added to the other practical courses which the students expect to pursue.

Fire burned over several hundred acres in the San Isabel National Forest last week. This fire was in the yellow pine belt near Beulah, a popular summer resort, and timber in that vicinity is of special value because of recreational features.

With deep regret we announce the death of Charles H. Neel, Surveyor-Draftsman, on June 16. Mr. Neel had been in poor health for some time, and for the past five months was confined to his home.

District 3 - Southwestern District

Attempts are being made to establish a market in southern farming regions for the wild horses now being rounded up on the Sitgreaves and other Arizona Forests. Six hundred horses have recently been corralled near Tucson and are being held for disposal.

S. Omar Barker, formerly a ranger on the Carson Forest, has just returned from France where he was in the 20th Engineers. Mr. Barker recently suffered a severe attack of pneumonia and measles and the after effects will not permit him to return to work in the Forest Service before next spring.

George Galer, formerly a ranger on the Carson, has returned from France where he was in the 20th Engineers. Mr. Galer expects to reenter the Service in this District in the near future.

Progress is being made on the question of grazing regulation on the public domain. With very few exceptions, the livestock associations in all the public land states have gone on record during the past year in favor of some kind of regulation under the permit or lease system. A convention to consider this question will be held at Salt Lake City July 21. N. J. Sinnott, Chairman of the House

Public Lands Committee, is reported to have indicated that he favors the regulation of grazing on the public domain. In New Mexico some interests are strongly urging that these lands be turned over to the states.

District 5 - California District

Flying seems to be an important activity of the Forest officers in the California District, judging by the prominence given to these rides in the daily bulletins issued in Washington by the Air Service. Here is a sample:

Mr. Coert Dubois, who served as Lieutenant Colonel with the 20th Engineers in France, now District Forester, made an inspection flight over Tahoe and Eldorado National Forests with Sergeant Cecil W. Buckley, Pilot, in a Curtiss JN4-D, maximum altitude 6,800 feet, flying time three hours and ten minutes. The vast expanse of territory covered within the short space of time was a great revelation to Mr. DuBois.

The Field Advisory Committee has ended its work and submitted a report. The task set before them comes under the following heads:

1. What work is now being referred to the Forester's Office which should be handled in the District Office?
2. What work is now being handled in the District Office that should be handled in the field?
3. Submit criticisms of District Office management.

The report is a voluminous document and on account of its size will not be made available for the field. It is full of excellent suggestions and keen criticisms. The District Forester has put it up to the Chiefs of Office in the following memorandum:

"Attached is the report of the F. A. C. on District Office functions and methods. Read it and see that your assistants do so also, and take such notes as are necessary to get action.

I had a feeling that many of our ideas and office methods were archaic and were based on habit, and for this reason this assignment was made to these men who had the field point of view. I was right. Our function is first and foremost leadership. We have lost that idea in many cases and slipped into the rut of 'review!! We needed this brought sharply to our attention, and the report does so.

With the exception of such matters as require action by higher authority, I want the suggestions made by this Committee put into effect. There are probably some minor points where it will be impracticable to comply with the suggestions immediately, but I'd like you to set to work to remove the obstacles to compliance.

It is not the idea that this report is 'thrown out for discussion' and that it should result in a great deal of talk and conference and defense on the part of the District Office men and little else. I agree with the spirit of it and the objects it seeks to aaccomplish. I shall hold you responsible for puttin the spirit and objects into effect in the ways suggested, unless you can devise better ways."

The Gray's Meadows public camp ground, on the Inyo Forest, is being put into good shape. Tables, benches, etc., have been erected. These grounds are visited by tourists from the South and by the residents of Independence. The wor of fixing up the grounds is done cooperatively by the Forest Service, Fish and Game Commission, Commercial Club of Independence, and one stockman.

Convict Lake is also being put into shape. At these grounds the tables and benches will be of metal--the legs of pipe and the tops of light sheet iron. It is hoped that this will prevent the camper from using the tables and benches for fuel.

District 5 - California District (Cont.)

Ranger Whittum, of the Tahoe Forest, posts his road direction signs in accordance with a definite policy worked out by him. He places signs on specially designated trees. All old defaced signs are removed, but not replaced unless to do so conforms to the sign plan. Ranger Whittum places not more than four signs per mile.

On June 5 William Michelson of Korbel was arrested for leaving his camp fire unextinguished on the Trinity Forest. A sentence of $50 or 15 days was imposed. In view of the defendant's statement and evidence that he had observed some precautions, the sentence was suspended for six months' good behavior. With this goes the requirement that Mr. Michelson report once a month to Ranger Everest.

That cattle and sheep can be grazed together on the same range allotment is to be demonstrated this summer on the Klamath Forest. One demonstration will cover 500 cattle and 12,000 sheep, the other 700 sheep on a cattle range on which there never have been any sheep. On the large sheep allotment it is planned to increase the number of cattle until the proper balance is reached. On the cattle allotment to which sheep go this year, the number of sheep will be increased from year to year until there is full utilization of the forage.

Assistant District Forester Rachford is now classed as the premier wielder of the willow wand in locating water by the residents up in the Modoc country. This honor comes to him by having designated the spot for the drilling of a well for water in the lava beds, a region where everybody else for the past forty years has maintained it absurd to expect to strike any water. By this courageous and defiant action, forage on about half a township will now have a grazing value. Water was struck at a depth of about fifty feet.

Apparently anything smacking of Europe or European ideas in the hotel line is tabooed in these good old United States. A bus driver of a local hotel approached National Forest Examiner Maxfield as he alighted from a train at San Jose recently. Mr. Maxfield asked him whether the hotel was American or European plan. "Absolutely American! One hundred per cent American!" was the reply.

Caterpillar tractors are in a fair way to replace horses on the big wheels used in logging in northern California. At any rate the question of substitution has been under consideration for some time.

The War Department authorizes the following under date of June 23:

"Exceedingly dry weather over California has caused increased vigilance of the aerial forest fire patrol and the watch from the observation balloon (U.S. Army Balloon School Arcadia Staff) was maintained throughout the night.

Mather Field Staff (Sacramento, Calif.) during the week ending June 21, 1919, made twenty-one flights over the National Forests, discovering four fires which were reported to the Forest Service at Placerville, Calif. The total mileage of the patrol was 3,000, and the patrol pilots were 53 hours in the air. * * * * The Forests patrolled were the Stanislaus, Tahoe, and Eldorado.

March Field Staff (Allessandro, Calif.) Twenty-four trips were made occupying thirty-eight hours covering 2,500 miles. * * * * *

Rockwell Field Staff (San Diego, Calif.) Eight flights were made in twenty-six hours and twenty-six minutes covering a distance of 2,115 miles."

One and one-half million acres of timberland belonging to the Central Pacific Railway Company will be protected against fire by the Forest Service, in accordance with a cooperative agreement just entered into. Under this five-year agreement the entire management and operation of the cooperative fire protection organization will be vested in the Forest Service. The lands covered by the agreement are located in Siskiyou, Shasta, Trinity, Placer, Nevada, Plumas, and Yuba counties and adjoin National Forest lands.

District 6 - North Pacific District

A standard lookout house will be erected on Kloshe Nanich Mountain, on the Olympic Forest. This mountain is on the Soleduck Burn divide, about eight miles west of Lake Crescent. The Washington Forest Fire Association, the State

Forestry Department, and the Forest Service will share the expense incident to the construction of this house. The Washington Forest Fire Association will supply a lookout man. This lookout station overlooks the 550 acres planted this spring on the Soleduck Burn. A ready-cut house has been shipped from Portland.

With the opening of the Sunset Highway through Snoqualmie Pass for the season, Denny Creek Camp Ground, on the Snoqualmie, is receiving a large number of visitors. This camp ground is located just west of the Pass and has been improved for the accommodation of tourists. A gravel road leaves the Highway through an entrance arch and traverses the camp ground. Water has been piped to the various camp sites which have been prepared, and concrete stoves are available for use of the public. A detailed plane-table map of the grounds, showing five-foot contours, has just been completed by Forest Examiner Hanzlik.

Supervisor Fromme, of the Olympic Forest, is to be detailed periodically during the summer to take charge of the Silviculture desk in the District Office. This will relieve Mr. Munger of routine and give him an opportunity to devote himself to researches and conferences in connection with the new program for the practice of forestry on private lands. During alternate periods Mr. Fromme will return to Olympia to take care of Forest matters and Mr. Munger will be on duty in the District Office.

A cross section of Douglas fir showing three concentric rings of white wood resembling sapwood within the red heartwood has been received in the District Office from the Whitman, for exhibit purposes. Experts differ as to cause of the freak, which is not uncommon in East Side Douglas fir, but believe it is not a sign of incipient decay but that for some reason during certain periods the tree has failed to form the material which colors the heartwood.

Dr. Baughman, game warden of Seward, Alaska, and a recognized authority on moose on the Kenai Peninsula, writes that no live moose have ever been moved or shipped from Alaska and anything of the sort would be in the nature of an experiment. He thinks that moose two or three years old could be moved better than moose fawns, and believes they should be caught in the winter and pastured until spring, when they could be shipped to the Olympic. He is sure he can get men to secure the moose at a cost of about $150 per moose on board ship at Seward, and Mr. Fromme proposes to try the experiment of shipping six or eight moose for liberation on the Olympic, probably on the Calawah or Bogachiel watershed, just beyond the end of the Olympic Highway, at Forks, Washington. A Moose Lodge in western Washington has already been interested in this project and will probably cooperate in sharing cost of moving the moose. Some help is also expected from the State. The matter is being taken up with the Biological Survey, to obtain all possible information, and federal cooperation by this Bureau is probable.

The Bureau of Entomology has established a new forest insect field station, at Coeur d'Alene, Idaho, for the study of insect problems in the timbered areas of Oregon, Idaho, and Montana. The station is in charge of Captain James Evenden, who will work under the direction of J. M. Miller, of the Ashland, Oregon, station.

Ranger Springer, of the Deschutes Forest, returning recently to his station at Crescent, Oregon, in his trusty flivver, discovered a bear alongside the road. Giving his machine more gas, he gave chase and followed the bear so closely that the animal took refuge in a tree where he made a good target. The carcass was placed in the back seat, and the ranger's meat problem was solved for several days.

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WEEKLY BULLETIN

Forest Service - Washington Office

(Not for publication)

July 7, 1919.

Ranger Mellenthin's Murderers Found Guilty

Murder in the second degree was the verdict of the jury in the case of the Mexican charged with the murder of Ranger Mellenthin, who last August attempted to arrest another Mexican who was a deserter from the Army. Fifteen years at hard labor was the sentence pronounced by the court. The convicted man is 60 years of age.

The deserter, son-in-law of the murderer, who was an accomplice to the murder of Ranger Mellenthin, pleaded guilty to murder in the second degree and was sentenced to life imprisonment.

Ranger Mellenthin had been called on by the local authorities to assist in the arrest of the deserter whom he found in a camp, and while in the performance of this duty fire was opened on him by the older Mexican and he was killed.

Good Roads Make Good Friends

The following letter was recently received in the Washington Office:

"Sirs:-

Mr. G. L. Wilfley, of Maryville, Missouri, and Mr. R. S. Wilfley, of Steele City, Nebraska, and their families wish to heartily thank the Department of Agriculture for the splendid condition of the roads through the Cochetopa National Forest in Colorado and to state that in grateful consideration thereof they rigidly kept the rules while traveling through recently.

Yours truly,
(Signed) R. S. WILFLEY."

Department of Agriculture War Memorial

The final drive for pledges and payments of subscriptions to the War Memorial Fund for the Department of Agriculture is under way.

To date $6,000 has been subscribed. The memorial is to cost $10,000 and it is hoped that the necessary funds will be subscribed. The funds already on hand are now on deposit and drawing interest.

British Timber Industry

All branches of the British timber industry are to be called together at an early date to consider plans to encourage the use and demand for British timber, and to develop the home-grown timber trade and the encouragement of forestry.

The conference is to be under the auspices of the English Forestry Association and the Royal English Arboricultural Society.

The tentative plan is to invite woodland owners, estate agents, architects, builders, and timber merchants in the effort to secure a substantial improvement of existing conditions. There seems to be a feeling that the home-grown timber trade has been too long neglected. It is stated that there still is to be found in Great Britain large quantities of ash, elm, and birch timber.

The Forestry Sub-Committee of the Reconstruction Committee states that before the war the United Kingdom was dependent for more than 60 per cent of its timber upon other countries. The proportion derived from sources within the Empire fell from 22 per cent in 1899 to 10 per cent in 1913. In 1913 there were imported 10,431,309 loads of timber (a load is equivalent to about 1,800 feet B.M.) from the following countries: Russia, 5,196,826 loads; Sweden, 1,759,417 loads;

British Timber Industry (Cont.)

France, 984,331 loads; Dominion of Canada and Newfoundland, 897,217 loads; United States, 511,351 loads; Norway, 437,106 loads; Portugal, 315,538 loads; Germany, 206,081 loads; Spain, 103,123 loads; small lots from other countries, 20,319 loads.

Before the war there were approximately 3,000,000 acres of wood in the United Kingdom, and the total annual felling has been estimated at 45,000,000 cubic feet, of which 30,000,000 cubic feet were conifers and 15,000,000 cubic feet hardwoods. On the basis of this estimate the yield was less than 15 cubic feet per acre per annum. During the war, of course, home fellings considerably increased, and very large areas of woods have been felled for war purposes. There are, however, great quantities of English oak, elm, and other timber still available for the use of the homeland, much of this far superior to the foreign product, and more suitable for various purposes.

There are available at the present time also large supplies of pitwood for collieries, and especially native hardwoods for building purposes, railway demands, and reconstructional work generally.

Airplanes Interfere with Grazing

Ranchers in San Diego County find objection to airplanes landing in the vicinity of grazing cattle, and so the Air Service has abandoned the temporary airdrome erected to house the airplanes used on the aerial forest patrol.

Wild Forest Animals in India

That the Indian Forester has a predatory animal problem is indicated by a communication in a recent issue of the "Indian Forester." This story matches the eagle stories of the Southwestern District.

"Your readers must all have heard tales by forest tribesmen of how panthers and even tigers are sometimes hunted by packs of wild dogs, and of how panthers are sometimes forced to seek protection by getting up trees, but that they are there watched by the dogs until forced to descend by hunger or some other cause, whereupon they are caught, killed and devoured by the waiting dogs. Again, they must have heard that hyenas are afraid of panthers. I have myself seen a panther angrily drive off a hyena which presumed to approach while he was feeding on his 'kill.' Incidentally it resulted in his death, for by so doing he came out from the shadow into the full moonlight and gave me a splendid shot.

Knowing this as regards the respect of panthers for wild dogs and hyenas for panthers, I was much surprised the other evening to see a hyena again and again approach within five yards of a panther 'kill' whilst wild dogs were feeding off of the scanty remains. Each time the hyena approached he was driven off by two or three of the dogs, and was once knocked over, but only to return again. How long this would have gone on I do not know but, after three-quarters of an hour or so, when it was getting dark, and I saw that the dogs would not go and the panther would not come, I shot one of the dogs with a charge of S.S.G. and dispersed the pack of dogs and hyena, got down and went home. To what does the hyena owe his immunity from the dreaded wild dogs?"

The $2,500 Salary Limitation

The Agricultural Appropriation Bill as it came from the Senate had tacked to it an interesting amendment sponsored by Senator King of Utah. This amendment stated: "That no person employed under any provision herein which carries a lump-sum appropriation shall be paid at a rate in excess of $2,500 per annum." The bill as reported back to Congress by the Conferees omitted this provision.

Excessive salaries are not to be found in the Department of Agriculture, for a statutory limitation makes $4,500 the maximum salary that can be paid any employee from lump-sum appropriation. The salaries for the Secretary, Assistant Secretaries, and the various Bureau Chiefs are statutory positions.

Endorse the Government Employees' Mutual Relief Association

Mr. Korstian has submitted the following endorsement of the Government Employees' Mutual Relief Association:

"On account of an attack of the 'Flu' last October and resulting complications, I have had occasion to draw on the resources of the Association three different times. During this six-month period I received benefits considerably in excess of all premiums paid during the preceding eight years that I was a member. As is often the case, these benefits came at a most opportune time to avoid financial embarrassment. When the clouds hung the darkest, the G.E.M.R.A. policy gave them a silver lining.

Every man in the Forest Service should be a member of this Association; you owe it to yourself, your family, and your fellow-workers. The wife of every Forest officer should encourage her husband to take out a policy in this mutual organization. This insurance is not contemplated to take the place of life insurance but it is a great help in time of sickness.

Don't put it off a minute longer! Don't wait for your friends to urge you to join, but sit down and fill out your application at once and then see what a fine feeling of satisfaction it is to know that you have made provision for unforeseen circumstances. The 'Flu' epidemic is abating but no one knows how soon it will return or with what virulence. Be prepared!"

Supervisor E. C. Shepard endorses the benefits of the Government Employees' Mutual Relief Association in the following:

"I have been a member of the G.E.M.R.A. since 1912. I have received several cash benefits during the past six years, two of which were for approximately $85 each. Just today, I received a check for $60.80 covering claim on account of the Spanish influenza.

It seems to me that the arguments are all in favor for some sort of a health insurance for a man on a salary, and I know of no commercial company which offers as good a proposition, considering the amount of benefits in proportion to the premium."

On Sunday, June 8, while riding the Camas Creek Range, Rangers Caperon and Hiatt of the Salmon Forest discovered four men standing near a freshly killed deer. They arrested these men and brought them, together with the deer, to Salmon, a distance of approximately sixty-five miles, arriving at noon on the tenth. The men were taken before Judge Conkrite; one of them pleaded guilty and was fined $50 and costs.

Woodland and Woods vs Woodlot

The increased interest in private forestry, particularly with reference to farm forestry, has brought about the general acceptance of the term "woodland" or "woods" instead of the original one of "woodlot."

A large proportion of the woodland in the eastern United States is in irregularly shaped tracts, spreading out over ridges, ravines, slopes, swamps, and poor lands, whereas "woodlot" carries the idea of a small sized, regularly shaped, and, in a large section of the country, fenced tract. When applied to the large or irregularly shaped tracts, it is obvious that the word inadequately describes the conditions. "Woodlot" probably originated in New England and seems fairly well established there. So long as only conditions like those in New England were considered, "woodlot" was accepted as adequate, but in the last few years farm forestry has been developing rapidly throughout the country. The private forestry movement is of tremendous importance not only to the owner of woodland, but to the whole community in which he lives or in which the timber occurs. It is extremely desirable that the success of the movement should not be hindered by the use in forestry literature of a term which does not fit the conditions.

"Woodland" and "woods" are more satisfactory, more expressive, and avoid the possibility of creating confusion in the minds of the people over most sections of the country where the word "woodlots" has never been in local use.

Indiana's State Reserve

Indiana's State Reserve of about 2,000 acres located in Clark County is to be visited by Governor Goodrich and other prominent officials on July 9.

The State Reserve was acquired in 1903 for the purpose of demonstrating to the land and woodlot owner what trees to plant and how best to manage his woodlot. The total area of 2,000 acres is practically all covered with native forest.

In a cleared area of 166 acres, plantations were made in 1904 and 1905. The species used are ash, black locust, catalpa, chestnut, coffee nut, cottonwood, Douglas fir, elm, hickory, linn, maple, Norway spruce, oak, pecan, sycamore, yellow poplar, walnut, white pine, and wild cherry.

The park at the Reserve contains 7 acres and has growing in it 100 native trees and shrubs. Everything is properly labeled with the common and scientific names.

Washington Notes

Colonel Graves left Washington on July 4 for the far West, stopping en route at Denver. Colonel Graves will join Secretary Houston and party in California.

Franklin H. Smith, who spent a couple of days Down East with his pulpwood friends, returned to Washington in time for the sizzling weather around the Fourth.

Clinton G. Smith, after an extended trip through the West, got back to Washington. We expect to get a report of his trip for a subsequent issue.

Austin Cary is back in Washington for a brief visit after a several-months' trip in the southern pine lands.

Captain A. C. Ringland did not start back for the U.S.A. on July 1, as planned. Captain Ringland has been on an important mission in Czecho-Slovakia and a cablegram received by the Forester from Mr. Hoover stated that it was essential that he stay a few weeks longer and finish the job.

Supervisor E. W. Shaw, of the Absaroka, was in Washington for a few days telling all about the elk situation.

Assistant Forester Hall has left Washington and expects to spend the next several months in the Middle West in connection with the private forestry program.

We now know that Major R. Y. Stuart is in the U. S. A., for he called on us in the Atlantic Building last week. Major Stuart hopes to shed his regimentals in time to get back into the game with the Forest Service by July 15.

C. P. Winslow, Director of the Forest Products Laboratory, came to Washington last week to help us enjoy the hot weather around the Fourth.

During the past week our thermometer has been uncomfortably close to 1 plus.

Forest Products Laboratory

The following resolution was adopted by the Waterproof Wrapping Paper Manufacturers' Association, which is affiliated with the American Pulp and Paper Association, at a recent meeting:

Whereas, The Forest Products Laboratory's various research investigatio on methods of packing war materials for overseas and domestic shipment were the means of saving many millions of dollars in cost of packing, in reduction of losses in damaged goods, and in the value of car, storage and ship space, and

Whereas, It is of vital importance from the standpoint of conservation and efficiency that steps be taken immediately to bring about some reform which will reduce the enormous damage claims resulting from improperly packed goods for both domestic and foreign shipment, and

Whereas, It is believed that the Forest Products Laboratory, because of its past experience, is the proper organization to determine by research what reforms are needed in present packing methods; therefore,

Be It Resolved, That the Waterproof Wrapping Paper Manufacturers' Association respectfully urges that the United States Government give the necessary financial support to the Forest Products Laboratory to enable it to continue efficiently and on a larger scale its exceedingly essential and valuable investigations on containers, packing materials and methods of packing for both domestic and export shipment.

W. T. Donnelly, consulting engineer in New York City interested in marine construction, particularly dry docks and ships, visited the Laboratory about a week ago. Mr. Donnelly is designer of the Donnelly type of wooden ship and is an enthusiast for the use of wood. Just at present he is constructing a 20,000-ton dry dock, which will require four million feet of lumber.

R. B. Lebo has arrived and will shortly assume his duties as Assistant Chemist in the Section of Preservation.

L. R. Morris, formerly box expert for the Laboratory, now doing some experting on his own, dropped in on us last week to get the latest news on boxes.

District 1 - Northern District

Supervisor Parker of the Missoula Forest recently addressed the students of the Missoula High School and told them all about the importance of forestry and the need for protection and care of the Forests in Montana.

The fire situation continues serious. The drouth is the worst experienced for many years. The past two weeks have been extremely hot, dry, and windy. Electrical storms have been numerous and have set many fires.

Conditions are generally bad in Montana. Snowfall was light last winter and streams and water holes are drying up. There is very little grass.

Reports are to the effect that the Milwaukee Railroad, which operates its trains electrically, has had to resort to steam for some of its power on account of lack of water for the hydroelectric plants.

District 2 - Rocky Mountain District

Mount Theodore Roosevelt is the new name for an old peak in the Black Hills Forest. Under the leadership of the citizens of Deadwood a Home Coming Week Celebration was held during the first week of July. Effort was made to get all former residents of the Black Hills to return for the celebration. A tower 50 feet high has been constructed on the summit of the Peak and a special road constructed to provide easy access. The Peak is not the highest in the Black Hills, as has been erroneously claimed. Its distinction for selection for this purpose was probably influenced by its proximity to the city of Deadwood, where the idea for the designation of the peak originated.

Jack, whose history was given in the June 9 issue of the bulletin, may have been the first horse owned by the Forest Service, but Myrtle and Lulu, the little team of mules on the Nebraska, lay claim to a longer period of service for the Forest Service than the friends of Jack can recite. This team was bought in July 1901 when three and four years of age, and have just passed their 21st and 22nd birthdays. They were first used in the examination of the land afterwards included in the Nebraska Forest and were so frisky that all of the members of the party had to take turns in driving them. R. S. Kellogg was chief of party, L. C. Miller was assistant, with J. H. Hatton, Prof. F. G. Miller of the University of Washington, Prof. Hugh P. Baker of Syracuse University, Prof. E. P. Bailey of Boston and Prof. C. A. Scott of the Kansas Agricultural College as members. Hatton's start in grazing is attributed to his success as mule skinner with this party.

After the establishment of the Forest, the team was used continuously until last fall for all kinds of work from heavy teaming to use as a buggy team and was known to many Forest Service officials. Myrtle and Lulu never became accustomed to automobiles and in their 18th year ran off with a load of coal upon the approach of an auto. The team--now badly crippled--is enjoying a well earned rest in the pasture.

The timber in the South Kawishiwi unit in the Superior Forest has been applied for by Robert B. Whiteside, of Duluth, Minn. This unit contains 1,678,000 feet of white pine, 565,000 feet of Norway pine sawtimber, and an unestimated amount of balsam sawtimber; 16,287,000 feet of jack pine, spruce, and tamarack mine timbers; 20,627 cords of spruce pulpwood, and an unestimated amount of balsam pulpwood. The advertised rate is $5.50 per thousand feet for white pine, $4.50 per thousand feet for Norway pine sawtimber and $.50 per thousand feet for balsam, $2.00 per thousand feet for mine timber, and $.50 per cord for spruce pulpwood and $.25 for balsam pulpwood.

The Rocky Mountain Lumber Company, which has been operating in patented timber and on small sales in the Routt Forest, has recently made application for the timber included in the North Fork of Elk River Unit, amounting to approximately 28,000,000 ft. B. M. of sawtimber and an unestimated amount of mine props.

The recreation improvements on Squirrel Creek, the Pueblo Municipal Camp Area, are now about completed and during the past week, since the beginning of the hot weather, have been used daily by a large number of tourists.

F. D. Mendenhall is now in charge of the Office of Engineering in District 2. Mr. Bonner, who has been here for some time looking after Engineering matters, will visit Districts 3 and 4 on a road inspection trip before returning to Washington.

The fire situation is extremely critical throughout the District. In Wyoming conditions are the worst they have been for years. In Colorado all reports indicate a serious situation. In South Dakota they are also bad. In Michigan there has been some relief by heavy showers and in Minnesota there seems to be no danger just now.

The large fire on the Wolf Creek Watershed on the Bighorn is now reported under control. This fire started June 26 and has been keeping the force very busy. In addition the Bighorn reports several smaller fires.

During the month of June there were 92 fires in the District. For the fiscal year fire fighting costs will be about $20,000.

District 3 - Southwestern District

Ten special cattle traps have been constructed on the Gila Forest in an effort to capture some wild cattle on the range owned by a large outfit. The traps are constructed along natural passways in each canyon of the range, and consist of double-pole corrals and ten-acre wire enclosures, eight wires with posts ten feet apart and three stays between posts. The cattle were salted at the locations before the construction of the traps.

Raymond F. Grefe, Deputy Supervisor in charge of the Grand Canyon, has resigned. Mr. Grefe entered the Forest Service in 1915 and has been there since 1916, except for the period of his military leave. He goes to Juneau, Alaska, to engage in business for himself as civil, road, and mining engineer.

Charles H. Kissam, National Forest Examiner, is back on the job after having seen service abroad with the 33rd Engineers.

The sum of $710 has been deposited by the State Land Office as its share to protect State lands in the Lincoln Forest.

All Arizona Supervisors will be appointed Sanitary Inspectors by the Arizona State Board of Health. Copies of the State health laws will be furnished the Supervisors.

Now comes the Coronado and reports through Ranger Rodgers that some of the turkeys placed by the Forest Service are still in evidence. Rodgers reports that one turkey comes down Turkey Creek regularly to eat in the alfalfa field, three live at the head of the canyon, and one has become domesticated and lives in peace and harmony with a local rancher's chickens.

Secretary Houston, accompanied by Mrs. Houston, the Swiss Minister and his wife, and others, are in the District. Messrs. Potter and Redington accompanied the party in its trip to the Grand Canyon and Salt River Valley.

Joseph A. Barrett, Forest Clerk in this District since 1915, with assignments to the Jemez, Datil, and Manzano Forests and the District Office, has resigned and gone to the Bureau of Public Roads at Denver. His summer's job will be as Chief Clerk on the Monarch Pass Road Project.

District 4 - Intermountain District

The sum of $100 has been awarded Forest Ranger I. N. Varner on the Cache Forest for damages to a horse owned by him while in use on official work.

Six hundred acres of larkspur on eleven Forests in this District are to be eradicated during the coming season. It is estimated that the work can be done at a cost of about $7 per acre.

District 4 - Intermountain District (Cont.)

Five Ford touring cars have been allotted to this District by the Bureau of Public Roads for use on road and trail work.

The Cottonwood Nursery recently had a bear as a visitor. He pulled about 100 trees out of a pail in which they had been recently packed and scattered the trees about. He also enjoyed himself in tearing the burlap into shreds.

Grazing Examiner Martineau has gone to the Payette on larkspur eradication work.

An application has been made for 50,000 railroad ties on the North Fork of the Provo River on the Wasatch Forest. On the basis of the appraisal the upset price has been placed at 8 cents per tie and $2 per M for sawtimber. It is estimated that there is a total of 106 million feet on the chance, and if the initial effort proves successful further purchases are looked for. The ties will be used by the Denver and Rio Grande Railroad Company.

R. B. Adams, Telephone Engineer, will in the future handle the telephone problems of this District in addition to those of District one.

Official recognition by the Forest Service has been extended to 103 livestock associations. This means that one-fourth of the total number of livestock associations recognized by the Forest Service operate in Utah.

The timber on the North and South Forks of Cottonwood Creek in the Wyoming Forest, amounting to 138,000,000 feet, has been sold to the Standard Timber Company, now operating on the Wasatch. Only one bid was received. The prices bid are 8 cents per tie, $\frac{1}{4}$ cent per lineal foot for mine props, and $2 per M for sawtimber. It is estimated that this timber will produce 2,153,000 railroad ties, 12,000,000 feet of mine props, and 40,000,000 feet of sawtimber.

The fire season is open in earnest, particularly so on the Wyoming and Teton Forests. Conditions seem to be about as bad as they were in 1910 and 1914.

Ernest Winkler and A. W. Sampson recently made a trip on the Dixie Forest to locate an area for experimental purposes to determine the practicability of grazing the browse range purely from the standpoint of the browse cover without reference to the herbaceous vegetation.

District 5 - California District

Wayside inns for motor tourists traveling in California along the State highway, which traverses the State from the Mexican border to the Oregon line, are to be erected at an early date, according to the local press. These inns will be a big boon for the traveler and will fill a long felt want. To really make summer travel popular in the United States we need more inns and stopping places in the country generally. Hotels in the large cities do not serve the same purpose as the roadside inns.

A number of ranchers in Santa Barbara County living in the Santa Ynez and Santa Maria Valleys contributed necessary funds to put a patrol man on during the month of June. County funds will be available for this work beginning July 1.

Supervisor Bigelow is a very busy man these days. In the short space of one week he made a ride in an airplane and assisted in the capture of two convicts.

H. V. Beeks, Forest Clerk on the Cleveland, has been transferred to the office of the District Fiscal Agent at San Francisco.

About fifty Y.M.C.A. boys from Imperial are on the Laguna Camp Ground for a 12-days' outing.

The last issue of the Road Bulletin for the present season has just gone out. The Road Bulletin has become throughout the valleys of the State and among the general traveling public one of the most popular services which we have been able to offer. Thereare on the regular mailing list some 750 people; in addition the District Office receives numberless visitors every day, all of whom ask for this service. Most of the Automobile and other associations are eager for the Weekly Bulletin and the information contained in it has been given a great deal of publicity in the newspapers and in some of the magazines during the past two months.

It is a service which is undoubtedly well worth while and one which is extremely popular.

District 5 - California District (Cont.)

Up to May 31 there have been 18 prosecutions in this District this season. They resulted in 16 convictions and 2 acquittals. Of the total, 3 were for incendiary fires (1 of the current year, 1 of 1918, 1 of 1917), 2 for fires from brush burning, 8 for camp fires unextinguished, 1 for grazing trespass, 3 for fish and game violations and 1 for violation of State Board of Health regulations on National Forest land. In addition, an army officer was arrested on the Cleveland Forest for shooting ducks out of season, but was discharged from the army and left for parts unknown while out on recognizance pending advice on the possibility of prosecuting him in the civil courts while in military service. A trio of boys who left a camp fire unextinguished on the Angeles Forest were rounded up by Guard DeLapp, and in lieu of prosecution, all being juveniles, were escorted out of the Forest and started on an 18-mile hike for home. The Forests participating in the 20 cases were: Angeles, 5; California, 2; Cleveland, 5; Klamath, 2; Sequoia, 4; Stanislaus, 1; Trinity, 1.

Dr. John T. Faris, of Philadelphia, who spent some time in this District gathering material has this to say about his visit: "An exceedingly pleasant and instructive stay of some three weeks in the National Forests of California." Practically all of Dr. Faris' time, except one day at General Grant Park and two at the Yosemite, was spent on the National Forests. After leaving California, he made connections with members of the District Forester's office from Portland at Klamath Falls, and District 6 has arranged an exceedingly interesting two weeks' itinerary for him, covering many of the beauty spots of Oregon and Washington.

Road construction on the Klamath Forest is about to begin. Contracts have been awarded for 15 miles on the Klamath River Road from Happy Camp down the Klamath River, the contract price being approximately $235,000. The contract for another section of this same road, commencing at Orleans and extending up the river with a length of 7.4 miles, has been awarded for $150,000. The awarding of these contracts marks the first step toward the actual construction of a road over the 50-mile gap between Happy Camp and Orleans, and further contracts will probably be awarded during the coming summer for the completion of the remainder of this road.

Plans are now under way to have a highway constructed from Happy Camp up the Klamath River to Hornbrook on the Southern Pacific Railroad, connecting with the State Highway system on that end, and from Orleans to the coast, thus eventually completing a good highway from the interior to the coast down the Klamath River. A few miles of road are still to be built on the Salmon River connecting with the present Salmon River road and the Orleans-Happy Camp Road, and with this completed the Klamath will have SOME roads.

Notice has also been received of the award of the contract for the construction of the Salmon River Bridge, the amount of the contract being approximately $7,600. This bridge is on the line of the road between Yreka and Somes Bar, where the Salmon River road connects with the Klamath River road mentioned above. About 4 miles of this road, lying immediately west of Forks of Salmon, has previously been constructed by the Department of Agriculture. As soon as the bridge has been constructed work will be started on another section of the road immediately west of the bridge.

The Klamath and Salmon River roads when completed will form an important link in the State Highway system between the roads being constructed by the State Highway Department through the Sacramento Valley and along the Coast. The forty million dollar bond issue, proposed for the State Highway system, carries an appropriation of $612,000 for the construction of the parts of the Klamath River road lying between Hornbrook and Happy Camp and between Orleans and the Coast route. The section between Happy Camp and Orleans will be constructed by the Federal Government and funds are already provided for the completion of this 50-mile section of the road.

District 6 - North Pacific District

The Western Plant Protective Association was recently organized at Riverside, California. The purpose of this Association is to secure and spread reliable information on plant diseases and pests in the West and to use its influence to obtain quick action in the case of emergencies. The membership of the Associatic includes foresters, pathologists, entomologists, nurserymen, in fact, representative men in all lines of horticulture and agriculture in the West. Professor Barss, of Oregon Agricultural College, and Dr. E. P. Meincke, forest pathologist at San Francisco, are the Association's first president and vice-president.

G. B. Posey, of the Bureau of Plant Industry, will take charge of all th scouting and inspection work of the white pine blister rust in the West. Thus fa this destructive rust has not been found in the West either on gooseberries or cu rants or the five-needled pines. The thorough secuting and inspection work by th office of Forest Pathology is being done in the West primarily to safeguard the sugar pine and western pine stands.

W.H.M.Woodward and Ranger Hon, of the Oregon Forest, are busy in locating trails which it is planned to construct this summer near Wahtum and Lost Lakes.

Supervisor S. C. Bartrum, of the Umpqua, is in the District office, to take up matters regarding his road program, including arrangements for storing a large amount of "TNT."

C. W. Boyce has recently been appointed Forest Assistant on the Columbia and is now on the job.

Esther B. Deckman, of the District office, made an enviable record in the Remington Accuracy Contest held in Portland June 19 by writing, without error, 860 words in 15 minutes. Had she won the prize (which no one did win), she must have written 900 words, without error, in 15 minutes. Only those typists who have proven their ability to write at the rate of 60 words a minute without error are admitted to the Accuracy Contest.

R. A. Zellar, who recently returned from military duty, has been assigned to the Tongass National Forest and will leave for Alaska early in July, in company with Mr. Flory, who then takes up his duties as superintendent of Alaska Forests.

Miss June H. Wertz, chief clerk in the Office of Silviculture, has been detailed to the Tongass for two months to arrange the timber-sale records and assist in the routine clerical work.

Grazing examiners in District 6 had an interesting meeting on the Whitman Forest. They are busy preparing working plans for a cow range and a sheep range c that Forest. The idea of the meeting is to secure uniformity in the preparation of such working plans and to iron out various differences of opinion concerning the information to be secured, the manner of securing it, and its later presentation to the supervisors in order that it may be of the greatest possible use.

Unless our judgment is poor, the grazing Forests of District 6 are going to have an excellent record for collection of grazing fees for the fiscal year 191 The number of delinquent grazing permittees this year is much lower than at any time in the past.

The stockmen of the Northwest are anxious that some action be taken by Congress to place the remaining public lands under control similar to that on the National Forests. Plans are under way to send a representation to a big meeting i Salt Lake City July 21.

R. L. Kline, who has been planting assistant at Wind River Nursery, on t Columbia Forest, for several years, has been transferred to road work and will be in charge of the Wind River road, from Wind River to Government Mineral Springs.

Mr. Hanzlik has returned recently from British Columbia University at Vancouver, B. C., where he has had charge of a course in forestry at the reconstruction school for returned soldiers, and has been assigned to working plan studies. He will make his headquarters at Seattle and will first prepare a working plan for the territory tributary to the Darrington branch of the Northern Pacific Railway, with a view to preparing an orderly plan for the removal of private timber as well as the Government timber on the Snoqualmie and Washington Forests tributary to that railroad, on a sustained yield basis.

District 7 - Eastern District

The members of the Eastern Forest Products Association, at its recent meeting in Bangor, Me., gathered around a table made from native Maine woods. The table is 8 feet long and 3 feet wide and has 5 legs. The top is made of 6 boards, 6 inches wide, of the following woods: white ash, bird's-eye rock maple, brown ash and cherry birch. Under the margin of the top is a plate to give a thick-top effect, which is made of white pine, hemlock, white cedar, and red spruce. Each piece of wood in the table is in natural finish, except one leg, which has been m hoganized, showing what can be done with birch.

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WEEKLY BULLETIN

Forest Service - Washington Office

(Not for publication)

July 14, 1919.

Running Without Money

The President, on July 12, 1919, vetoed the Agricultural Appropriation Bill. The rider repealing the daylight saving law, in no way germane to the main bill, was the cause of the Presidential disapproval.

This action by the President gives us the unique and interesting experience of working for the Government without the provision of money for salaries and similar items.

Many of us have for some time had the feeling that we were working without adequate salary provision, but the feeling has been decidedly accentuated with the arrival of a payless payday.

Big Increase in National Forest Receipts

Net receipts from the National Forests for the year ending June 30, 1919, reached a total of $4,358,414.86, making an increase of $783,484.79 over the receipts for the previous year, and setting a high-water mark in receipts.

All seven Districts share in the honor of having increased receipts, as follows:

Districts	Total Receipts 1919	Increase over 1918
1	$569,305.91	$ 37,250.30
2	705,738.44	135,014.57
3	861,313.25	154,673.39
4	786,389.31	195,942.36
5	521,255.30	86,268.47
6	754,603.38	120,903.08
7	159,809.27	53,432.32

The showing of the various activities is not so unanimous. Some fell behind, but the loss was made up by others.

	Total 1919	Increase	or Decrease
Timber Sale	$1,503,367.37		$16,499.32
Timber Settlement	8,938.77		90,561.85
Timber Trespass	8,623.38	$ 6,293.53	
(Cattle & (Horses	1,607,006.85	568,032.31	
(Sheep & Goats	949,955.35	286,640.31	
Grazing Trespass	52,207.65	28,675.29	
Special Use	136,112.56	16,134.01	
Occupancy Trespass	689.43		517.96
Water Power	72,322.06		21,654.29
Fire Trespass	5,258.48	1,640.24	
Property Trespass	21.00	21.00	
Turpentine Sale	13,220.08	4,886.06	
Livestock	--		296.42
Turpentine Trespass	691.88	691.88	

Big Increase in National Forest Receipts (Cont.)

The following tabulation shows the total net receipts received by the Forest Service for the period that the National Forests have been under our supervision:

Fiscal Year	Total Net Receipts
1906	$ 757,813.01
1907	1,530,321.88
1908	1,788,255.19
1909	1,766,088.46
1910	2,041,181.22
1911	1,968,993.42
1912	2,109,256.91
1913	2,391,920.85
1914	2,437,710.21
1915	2,477,491.75
1916	2,813,927.43
1917	3,434,874.47
1918	3,574,930.07
1919	4,358,414.86
	$33,451,179.73

The Proposed Department of Public Works

A Department of Public Works is proposed in a bill recently introduced in Congress. In creating this Executive Department it is aimed to change the designation of the present Department of the Interior to Department of Works, and make a reassignment of a number of Government bureaus and offices.

Of the present Department of the Interior, the following transfers are to be made:

The Patent Office to the Department of Commerce.

The Bureau of Pensions to the Department of the Treasury.

The Bureau of Education to the Department of Labor.

The Bureau of Indian Affairs and the Board of Indian Commissioners to the Department of Labor.

The Saint Elizabeth's Hospital and the Freedmen's Hospital to the Public Health Service, Department of the Treasury.

The Columbia Institution for the Deaf, and Howard University to the Bureau of Education, Department of Labor.

The following are to be transferred to the new Department of Works:

The Supervising Architect's Office, now subordinate to the Department of the Treasury.

The Construction Division of the United States Army, River and Harbor Improvements, the Mississippi River Commission, and the California Debris Commission now subordinate to the Department of War.

The Coast and Geodetic Survey and the Bureau of Standards, now subordinate to the Department of Commerce.

The Bureau of Public Roads and the Forest Service, now subordinate to the Department of Agriculture.

Provision is made for four assistant secretaries, each of whom shall be specially qualified by training and experience for the particular services over which he may have jurisdiction, one assistant secretary to have administrative jurisdiction over all matters of engineering design and construction; one assistant secretary to have administrative jurisdiction over all architectural design and construction; one assistant secretary to have administrative jurisdiction over all scientific work and surveys; and one assistant secretary to have administrative jurisdiction over all land and legal matters of the Department.

The Proposed Department of Public Works (Cont.)

The basis for the bill seems to be the activities of several engineering societies, who have organized a necessary force to give publicity to the proposal and, more important still, have provided the funds to keep the publicity bureau in action.

Elks Endorse Elk Program

The following resolutions were passed at Atlantic City and endorse the elk program as formulated by the Forester:

RESOLUTIONS

WHEREAS the Grand Lodge B.P.O.E. in 1907, 1911, and 1912 conducted investigations looking to the protection and preservation of the American Elk Herds from further destruction, and

WHEREAS the conditions in connection with these Elk Herds have now become more acute, and

WHEREAS the Federal Government with other cooperators has also conducted extensive investigations covering a period of years and has published a definite program for the care and management of these Elk Herds, and

WHEREAS this program does not differ materially from the findings and recommendations of the special commissions which have been approved by the Grand Lodge.

THEREFORE BE IT RESOLVED that the Grand Lodge hereby reaffirms its interest in the protection and preservation of the Elk, approves the program published by the Federal Government for their protection and preservation, and refers the matter to the committee for the Good of the Order with instructions to cooperate with representatives of the Federal Government and other agencies in putting said program in to effect.

BE IT RESOLVED FURTHER that in furtherance of said program the Grand Lodge respectfully memorializes the Congress of the United States to pass the annexed bill which is made a part of this resolution.

Forest Inspector Nelson was given the privilege of addressing the members of the Grand Lodge in session and set forth the program with the results indicate above. Colonel Graves had been invited to address the convention, but was prevented through his absence in the West and so designated Mr. Nelson, who has been active in the elk program, as his proxy.

The following is a summary of the bill referred to in the resolutions:

The proposed bill provides for the addition to the Absaroka and Gallatin Forests of a narrow strip of land extending north from the Yellowstone National Park and situated between these Forests, with the authorization to accept as gift any private lands that may be offered, or to give other Government lands in exchange for private lands needed for elk protection. This provision is extended t private lands within National Forests adjoining the Yellowstone National Park.

Traveling Expenses

Beginning July 1, 1919, reimbursement to Forest officers of expenses incurred in connection with official travel will be on the basis of actual expenses subject to such maximum limits as may be imposed from time to time by the fiscal and administrative regulations. Exceptions will be made only in very special ca and where it would be impracticable on account of the character of the work the particular officer may be engaged in.

This decision to return to actual expense follows an extended trial of various per diem schemes.

New Wood Treatment in Denmark

A company has been organized in Denmark, according to a consular report, which aims to prepare woods, especially the cheaper kinds, such as birch, ash, and elm, by a patented method that makes them more durable. All wood treated by this process is called teakin wood. It is claimed that this chemical process causes certain changes to occur in the character of the wood within 24 hours which normally take place only after many years of drying.

It is stated that, on the final evaporation of the water which may still be left in the wood after the application of the chemical process, the wood becomes harder and more durable than after the aging process.

Teakin birch is of a beautiful golden brown color, and when polished with potash takes on a mahogany red hue. Teakin ash is a substitute for teak. Teakin fir is of a uniform color all through, and is used for office fittings and furniture, and for veneering.

Logging Controlled by Technical Forester

A technical forester has been given exclusive control of the logging operations conducted by the Anglo-Newfoundland Development Company in Canada. The company was organized in 1905 by Lord Northcliffe to supply his English newspapers. The forester is now completing an extensive set of growth tables and volume tables. Studies have been made to determine what new growth has followed clear cuttings and partial cuttings, and old burns. A number of sample acres have been laid out for permanent observation and have been logged in various ways and with different diameter limits to find out whether any logging method will give a better second crop of value in the pulp business.

A forest survey was started before the war and will give the company a complete inventory of its holdings which cover 2,500,000 acres. The company has adopted a definite scientific forestry policy with a view to keeping the production of the timberlands on a permanent basis.

State Forest Reservation for Kentucky

A gift of 3,400 acres of timberland on Pine Mountain has been made to the State of Kentucky by the Kentenia-Catron Company and this will constitute the first forest reservation of the State. The land is well timbered, not known to contain minerals, and is not suited for agricultural uses.

A Mechanical Device for Felling and Bucking

A demonstration of a mechanical device for felling and bucking timber was recently made in Washington. Several members of the Forest Service attended. While not in perfected form, the instrument cut down and cut up trees with great rapidity; it was reasonably compact and portable; and it looked, therefore, to those present, like a device of considerable promise.

The power is furnished by a motorcycle engine mounted on a frame, weighing, with the saw, about 100 pounds, so that two men can readily carry and support it. The power is applied to a wheel matched by another at the far end of the frame, the saw passing over these flat in the plane of revolution, back to the wheels, held in place by the bind of grooves cut in the wheels' circumference. So running, the saw has to be made up of segments. These are very short, two raking teeth or one clearer to each segment; successive ones fastened together by a peculiar rivet. On this last construction the inventor spent a great part of his energy. Backed by capitalists he has been 12 years at it, and in the rivet believes that he has a device of wide and useful application.

Should this sawing device prove as good as it promises, it ought to have wide use in lumbering. Falling and bucking are what it is primarily designed for, but sawing to length in water is a use to which it could readily be put, not only its rapidity but the fact that it cuts but one way giving it big advantages.

The owners of the device are now engaged in perfecting engine details and expect to be in the market shortly. No machines have been made for sale as yet.

Washington Notes

Captain R. C. Hall was a visitor at the Atlantic Building last week. We do not know of his future plans. Just at present he has gone West to visit his family.

John L. Cobbs, Jr., after fifteen months in the wilds of Arkansas, is back with us enjoying the excellent Washington weather, which he is going to do as a member of the Office of Engineering.

District Forester Reed has returned to Washington from his trip down East. Mr. Reed has promised us a full account of his trip for the next issue.

Major E. W. Kelley stopped off in the Washington Office en route for San Francisco. He did not indicate what his plans were for the future.

James T. Jardine has left Washington for an extended field trip, which will keep him away for most of the summer. Mr. Jardine's first stop will be in District 4, and then he will visit Districts 6, 5, and 3.

Forest Products Laboratory Notes

Charles P. Juckem and L. R. Denicke took a run to Chicago last week to select bed tarpaulins from the condemned army supplies for the fire fighters out West. They gathered in 1,400 shelter halves, or, in other words, halves of army shelter tents.

About 13,000 feet of cypress is headed for the Laboratory from Florida, according to word received from J. S. Mathewson who has been scouting for the material.

J. D. MacLean is back in Madison from a ten-days' trip in the East, where he inspected various projects.

Otto Kress, of the Pulp and Paper Section, is out on a trip arranging for a commercial demonstration of the use of cotton linters in the manufacture of book paper.

District 1 - Northern District

District Engineer Lautz made Miles City and Billings his headquarters for the past two weeks on his inspection of road projects in the eastern part of Montana.

An air compressor for operating an automatic jack hammer to be used in drilling rock in trail construction has been purchased. F. E. Thieme did the buying at Spokane. The apparatus is readily portable. It has been shipped to the St. Joe Forest for use on the St. Joe river trail.

A critical fire situation exists in the District. Weather records have never before indicated so critical a situation in Montana and Idaho. Every Forest officer is working at high pressure. Hundreds of fires have been reported, but fortunately but few have done really serious damage, on account of the eternal vigilance and energy of the patrol force.

The hardest fire to handle is near the head of White River on the Flathead Forest along the Continental Divide, where it is difficult to get from the west, and so the call has gone to the force on the Lewis and Clark to get at the fire from the east. Ashes from this fire have been carried east out of the Forest and dropped on the streets of the town of Chouteau.

A second fire in the Swan Valley on Rumple Creek caused many anxious moments for the Forest officers, but is now in good shape.

On the Selway one lightning storm set fourteen fires. Smoke chasers and improvement crews got busy and extinguished all fourteen before any real damage was done.

The extreme drouth in the grazing regions makes fire prevention in the eastern Forests of the District particularly imperative. Every blade of grass on the summer range is needed for the stock. Considerable damage to the range has already been done by fires on the Madison and Helena Forests.

District 2 - Rocky Mountain District

Assistant Forester Barnes is now on the San Juan, and from all reports is finding his trip very interesting.

Preliminary examination has been made on the Arapaho, White River, and Routt Forests to select a tract of from 75,000 to 100,000 acres to be turned over to the State of Colorado in exchange for school sections.

A sale of 3,160,000 feet of western yellow pine saw timber, at the rate of $3.50 per thousand feet, is about to be made to the Galbreath Tie & Timber Company of Del Norte, Colorado. This timber is included in the Fawn Gulch unit on the San Juan Forest. This is a comparatively accessible body of timber located near the San Juan Ranger Station, approximately five miles from Pagosa Springs.

Assistant District Forester J. H. Hatton recently returned from a trip on the Nebraska Forest. Western Nebraska has been experiencing unusually dry weather; but a peculiar condition of the sandhill grasses is that dry weather seems not to affect these ranges as it does the heavier soil districts. It is reported that no matter how dry it may get, the sandhill grasses look fresh and green.

The greatest problem on the Nebraska Forest is to get fuller utilization, and this is being accomplished through the construction of windmills and wells. Our present allotment for the sandhills pastures is 58 head per section, but hay may be cut in a great many of the pastures even at this rate of stocking. It is now believed that with better water and salt distribution, this figure may be raised to about 75 head per section. Another encouraging feature about the sandhills pastures is that fire protection and grazing are producing better species of grass like the grama grasses.

The first cooperative free use association in the Rocky Mountain District was recently organized on the San Isabel Forest by Supervisor Hamel. On the Cotton Creek watershed of the San Isabel there is a large area of fire-killed timber which local residents who are entitled to free use privileges are anxious to secure. To make the timber accessible, it is necessary to construct a road to the area. A number of local residents have for some time been willing to contribute toward the construction of the road necessary for the exploitation of this timber, provided protection would be given them against other residents who would not assist in such construction work, but who would undoubtedly desire to use the road to get the free-use timber.

The local residents, with the assistance of Supervisor Hamel and the local ranger, have organized an association for the construction of the road and have been recognized by the District Forester in much the same manner as stock associations are recognized. The Supervisor has been given authority to restrict the granting of free use in this area to qualified permittees who have contributed their fair share toward the construction or maintenance of the road.

The organization of this association is an experiment, but it will bring about the construction of a much-needed road and make it possible to secure timber products from an area heretofore inaccessible. The road will also make it possible to reach an area important for recreation, as the scenery in the Cotton Creek Canyon is very attractive.

M. W. Thompson, of the Office of Silviculture, has just returned to Denver from a field inspection trip on the Durango, San Juan, and Rio Grande Forests.

Insect control work has been undertaken during the spring on Pine River and Deep Creek on the Durango and on the upper Piedra on the San Juan. Work on these areas was started under the direction of Ralph Hopping, of District 5, and later carried on by local Forest officers with the assistance of Deputy Supervisor Pearce.

Several species of bark beetle (Dendroctonus ponderosa Hopk) and others of the same genus and a species of Ips were found. The larger trees are cut and peeled up to the lower limbs, the bark raked up to the trunk and burned. The limbs are cut off and piled over the trunk and burned. Smaller trees are cut into short lengths and burned in piles without peeling. The Black Hills beetle (Dendroctonus ponderosa Hopk) may be controlled by simply peeling the bark from the tree, but in this case other bark beetles are located just within the bark of the larger trees so that burning is necessary in order to kill the insects. The use of fire is also necessary to dispose of the slash from the tops and small trees.

Very satisfactory work has been accomplished; but it will not be possible to complete the control work during the present season. If sufficient funds are available, it should be possible to have the most serious infestations under control after another season's work. These infestations have spread rapidly and are the most serious which have occurred in the Rocky Mountain District since the yellow pine in the Black Hills was attacked a number of years ago.

District 3 - Southwestern District

A sale of 1,300 M feet of western yellow pine, Douglas fir, white fir, Mexican white pine, limber pine, and Engelmann spruce timber on the Lincoln National Forest has been made to Baird & Foulkes at $2.10 per M feet.

District 4 - Intermountain District

A. W. Sampson writes the following regarding twisted barbless wire of which the praises were recently sung by Supervisor Raphael:

"Supervisor Raphael's statement in the Daily News concerning the serviceability of twisted barbless wire is fully substantiated by extensive use of this wire at the Great Basin Experiment Station. In 1913 a horse pasture of six acres was constructed at the head of Ephraim Canyon at an elevation of 10,000 feet, four strands of the wire being used. To date there has not been a break in the wire despite the fact that in many places the fence is entirely hidden by snow for several weeks. The repair work in the spring merely requires the replacing of the wire where the staples have given way. If the corner posts are properly reinforced one stretching of the wire, i. e., when originally placed, does the job, as the tension of the wire is not impaired by the weight of the snow. I believe that the No. 12 Twisted Barbless Wire is the best material available for the construction of horse pastures at high elevation."

District Engineer Martin has left Ogden for a ten-days' trip which will take him to the Minidoka Forest, the Teton Pass project, the Pine Creek road, Star Valley, and the Freedom-Soda Springs project.

District 5 - California District

Supervisor Morrow of the Lassen has arranged for the inclusion of 289,000 acres of private holdings within the boundaries of the Forest in cooperative fire agreements. There are about 384,000 acres of private lands in the Forest.

Miss Alena Kraus, clerk in the District Office of Silviculture, has resigned to take up the duties of private secretary to the vice-president of a large company.

Lumberman D. C. Birch has resigned and will go with a private lumber company operating east of Madera. For some time past Mr. Birch has been the mainstay in Silviculture.

District 6 - North Pacific District

A start has been made in Alaska under the Federal Aid Road Act. The first cooperative agreements have been received by the District Forester for the Ketchikan, Portage, Petersburg, and Juneau projects. The agreements are signed by the Territorial Commission. The projects will be handled through the chairman of the Alaska Road Commission.

Charles and William Lindsay plead guilty June 7 to unlawful inclosure of public lands on the Crater, and were fined $329.55 each. Most of the lands inclosed were O. and C. lands, and the amounts of the fines represented the civil damage.

No serious fires have as yet occurred this year. Up to June 30 there was apparently little danger in western Oregon and Washington, but on the east side of the Cascades it was very dry.

Supervisor Allen, of the Rainier, and Mr. Cleator, of the District Office, went to Yakima May 26, expecting to spend two or three weeks surveying summer home sites on the Naches River. Mr. Allen was able to stay only a few days; then went

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WEEKLY BULLETIN

Forest Service - Washington Office

(Not for publication)

July 21, 1919.
July 28, 1919.

An Explanation

Special editions, souvenir editions, and double numbers are not infrequent occurrences in the publicity world. The Weekly Bulletin is not in an imitative mood, but this issue is a combination number for July 21 and July 28. We are carrying both dates to save confusion, and hope to have the Bulletin appear with renewed vigor and strength after the brief vacation.

Money at Last

The much-delayed appropriation bill for the Department of Agriculture was signed by the President on July 24. The bill as passed by the Senate had a rider attached to it affording relief to drouth-stricken homesteaders in the West. This rider met with general approval, however, and delayed the bill only an additional twenty-four hours.

The amended bill was reported to the House on July 24; by a short cut immediate action was taken, and the amended bill was passed without being referred to the Committee. The President signed it late the same afternoon, a perfect ending to the first perfect day we have had in Washington for some time.

The rider provides "that any homestead settler who, during the calendar year 1919 finds it necessary to leave his homestead to seek employment in order to obtain food and the necessaries of life for himself, family, and work stock, because of great and serious drought conditions, causing total or partial failure of crops, may upon filing with the register and receiver proof of such conditions in the form of a corroborated affidavit, be excused from residence upon his homestead during all or part of the calendar year 1919, or the current year of such homestead which may fall principally in the year 1919, and in the making of final proof upon such an entry absence granted under this act shall be counted and considered as constructive residence by said homesteader."

Stockmen Endorse Federal Range Control

The bill providing for the regulation and improvement of grazing on public lands introduced in the Senate some time ago by Senator William H. King was endorsed by the delegates to the Western stockgrowers' meeting held at Salt Lake last week.

The resolution giving endorsement to this proposed bill calls for Federal control under the supervision of the Secretary of Agriculture. This report was adopted by the convention with but one dissenting vote, cast by a delegate from Wyoming. The Wyoming delegation held out to the bitter end for State control.

The stockmen organized a new association: "United Stockmen's Association for Federal Public Lands Control," whose sole purpose will be to secure legislation for the control of grazing upon the public lands under the supervision of the Secretary of Agriculture. In order that this committee might work effectively, $4,000 was voluntarily subscribed toward a fund to be made available to cover expenses of the delegations to be sent to Washington in the interests of this proposed legislation.

Foresters Meet in New York State

The second summer meeting of the New York State Section of the Society of American Foresters will be held at Wanakena, N. Y., from July 29 to 31.

J. Girvin Peters will attend as representative for the Forester, who is now out West. The outlined program covers a wide range of topics, and gives promise of many interesting discussions.

Promptness in Accounts

A call has been made by the Auditor for the State and other Departments that Government employees, upon the completion of a trip or rendering of a service, submit expense accounts and vouchers covering purchases with reasonable dispatch. The Auditor handles accounts for the Departments by quarters, and his request is that vouchers be submitted within the quarter the expense is incurred.

This is manifestly impossible, but the point is that there be no unreasonable delay. This means that vouchers for purchases be certified by the field officers as soon as the service is rendered, and that expense accounts be submitted promptly and not six months later. To delay not alone interferes with a prompt dispatch of Government business from the Government side, but is apt to convey a wrong impression to the public with whom we deal.

Protecting the Name of Pinus Strobus

Steps have been inaugurated before the Federal Trade Commission to protect the fair name of *Pinus strobus* - white pine - against misuse by manufacturers who are trying to persuade the commercial world that their product is equal to the far-famed white pine.

The term "white pine" has been applied for generations to the lumber coming from the tree known botanically as *Pinus strobus*. There is probably no other timber that is rated so highly for general building purposes, and this fact has influenced manufacturers to label products from *Pinus ponderosa* - western yellow pine - as western white pine. The protest is lodged against the use of "western white pine" in speaking of products from *Pinus ponderosa.* The petitioners want such products called western yellow pine or western soft pine.

On the basis of botanical and commercial considerations the following classifications are suggested by the petitioners: Western white pine to include and be applied to:

1. Pinus monticola, which may also be styled Idaho white pine.
2. Pinus lambertiana, which may also be styled California sugar pine or California white pine.
3. Pinus flexilis, which may also be styled Rocky Mountain white pine.
4. Pinus albicaulis, which may also be styled western white bark pine.
5. Pinus strobiformis, which may also be styled Mexican white pine or Arizona white pine.
6. Pinus aristata, which may also be styled foxtail pine or hickory pine.

Western yellow pine to include and be applied to:

1. Pinus ponderosa, which may also be styled western soft pine.
2. Pinus jeffreyi, which may also be styled western soft pine.
3. Pinus ponderosa scopulorum, which may also be styled western soft pine.
4. Pinus chihuahuana, which may also be styled western soft pine.
5. Pinus arizonica, which may also be styled western soft pine.
6. Pinus attenuata or knob-cone pine, which may also be styled western soft pine.
7. Pinus contorta and Pinus contorta murrayana, which may also be styled western soft pine.

Provided that either the name western yellow pine or western soft pine, as above applied, may, when it is desired to designate the locality from which cut, be prefixed by the name of the State in which the wood is actually cut.

Canadian Foresters in the Woods

The summer meeting of the Woodlands Section of the Canadian Pulp and Paper Association was held last month at the Berthier Nurseries with the permission of the Quebec Provincial Government.

District Forester Reed was the Forest Service representative in attendance.

The party of one hundred on the first day visited, as guests of the Quebec Forest Department at Berthier, P. Q., the government nursery which produces stock for distribution to private timberland owners to encourage reforestation. On the second day the visitors were the guests of the Laurentide Paper and Pulp Company at its mill and headquarters town at Grand Mere. Here the company forester, Elwood Wilson, explained the operation of the nursery, which has a capacity annually of one million four-year-old Norway spruce transplants. This stock is used on company cut-over lands at the rate of 1,700 per acre, and at a cost of about $10 per acre.

Mr. Reed states that the principal problem for the pulp and paper manufacturers of Quebec is the exhaustion of raw material. Until recently the Quebec government considered the timber resources practically inexhaustible and did much to encourage additional manufacturing plants. The bulk of the timberlands in the Province are held by the government.

The operators own but little. They acquire stumpage by the purchase of "limits." The typical limit has an acreage of 50 square miles, with a ten-mile frontage on a drivable stream and extending inland five miles, which is considered the maximum possible haul.

Every ten years the Department of Lands and Forests fixes a flat rate stumpage for the whole Province and a flat ground rental rate.

The holder of the limit under present rates pays an annual ground rental of $5 per square mile and approximately $1.35 per thousand feet, board measure, for all spruce he cuts. The timber is scaled by government scalers. The limit is put up at auction and award made to the operator offering the biggest bonus. These bonuses run as high as $5 per square mile.

This lump sum payment is made before the contract is signed. The limits are put on the market without much being known as to the boundaries or the quality and quantity of timber. Marking of boundaries, estimating of the timber, and mapping of the country are done by the foresters in the employ of the operators.

The cutting is done on a diameter limit basis set by the government.

In the general discussions held at the meeting, Mr. Reed says, it was brought out that the general opinion is that poor forestry is being practiced under this method of diameter limit cutting. Under these rules the cut per acre is materially reduced and the trees left standing are easily wind thrown; this loss more than offsets the advantages to be gained by leaving them as a basis for a second crop.

It was the feeling that the best silvicultural results could be obtained if the operator cut to a merchantable limit, or where pulpwood is cut, cut clean. About 6 cords of spruce pulpwood per acre is the average yield in the Province.

The annual consumption of the average pulpwood mill in the Province ranges from 60,000 to 120,000 cords, which means that each mill utilizes timber from 10,000 to 30,000 acres. At one time it was thought that the cut-over lands would grow up again so that there would be a second crop of spruce cordwood ready upon the completion of the final cutting. Closer estimates made by technical foresters now employed have indicated that instead of having perpetual supplies the operator had but a 30 or 35 years' supply ahead.

Spruce and a small percentage of balsam are the only merchantable species at present. In cutting, beech, birch, maple, and popple are left standing, and the reproduction of softwoods is poor. A very long time must elapse before it is profitable to log the country a second time for softwoods. Elwood Wilson holds the solution to be in artificial reforestation, which policy he is following and in line with which he has developed the company nursery already mentioned.

Eckbo Goes to South Africa

Nils B. Eckbo, a member of the Forest Service since 1907, leaves for Pretoria, South Africa, on August 2, to assume the duties of "Chief of Wood Investigations" in the Forest Department. This new work will offer exceptional opportunities for research in kiln drying methods, testing, and utilization in general. Best of all, there is a generous salary attached, and Mr. Eckbo felt the call to accept.

Mr. Eckbo has been at the Forest Products Laboratory at Madison for some time, but the greater part of his twelve years' service was in District 4.

Washington Notes

Lieut. Col. W. B. Greeley has returned to the U. S. A. Colonel Greeley expects to be back on the job as Assistant Forester as soon as he has had a chance to get acquainted with his family.

J. A. Mitchell has left Washington for an extended field inspection trip in connection with fire cooperation work under the Weeks Law which will take him to Michigan and Wisconsin and keep him in the field until the middle of September.

H. E. Surface has resigned from the Forest Service and is now a member of the income tax division of the Treasury Department. Mr. Surface made the change because he found his pre-war salary in the Forest Service inadequate to meet the stern realities of present post-war prices.

District 2 - Rocky Mountain District

The recreation and fire publicity cancellation stamps in use at the Denver and Colorado Springs post offices have turned out to be one of the biggest advertising "hits" for the National Forests ever worked up by the District office. From comments received there is no question that people read the slogans printed on the face of letters. The special wording on a cancellation stamp attracts attention.

During the exceedingly bad June fire season in the District as high as 40,000 letters, all bearing the wording "Be Careful with Fire in the Mountains" were sent out in a single day from the Denver post office to points throughout the Rocky Mountain region. The dies are being run from June to October 31, and, in addition to the fire slogan, it is estimated that several million letters will go out bearing the invitation to the public to "Vacation Outdoors in Colorado's National Forests."

Assistant Forester W. C. Barnes has completed a several weeks' trip in the southwestern part of Colorado, and reports an excellent forage outlook since the recent rains in that section. Mr. Barnes has gone to Ogden, Utah.

The situation as it now exists in Colorado is well covered by the following statement by a member of the Stock Yards Company who recently visited the western slope:

"While the western ranges were not particularly dry, they have reached a point where moisture was needed if forced shipments of stock were to be prevented. As it stands, the cattle are all coming out nicely and there will be good-sized shipments from western Colorado in the fall.

A majority of the western shipments, however, will be on account of the lack of winter feed. There is a seventy per cent hay crop in the western counties instead of the full supply of former years. This feature will cause considerable stock liquidation in the fall."

Application has been received from the Colorado Stockgrowers' Association for recognition of a duly appointed advisory board. This will enable us to get in closer touch with the Colorado Association, something that we have desired for a good while.

Application has been received from the Warren-Lamb Lumber Company of South Dakota for the timber located within the Slate Creek watershed on the Black Hills Forest. This unit is estimated to contain approximately 17,000,000 feet of

District 2 - Rocky Mountain District (Cont.)

timber, and it is planned to take the timber out by means of a flume. It is understood that the building and location of the flume is to be under the direction of C. H. Gregory, formerly lumberman in District 1.

Prof. H. R. Francis, landscape forester, of the New York State College, is on the Pike and Colorado Forests studying recreation values. Prof. Francis is also studying the recreational values in the Rocky Mountain Park, and is having ample opportunities to compare results. He is being directed to the public improvements made in the Mt. Evans region and to those on the Municipal Park area, which has been dedicated to the use of the city of Fort Collins and improved in cooperation with the city. These furnish a fairly good example of the recreation activities of the District, and contrast well with National Park administration.

The Ford truck went into service on the Colorado Forest last week. The motorcycle patrol and tourist patrol up and down the Big Thompson Canyon are also under way.

Arrangements have been made for a definite program of assigning supervisors to other Forests for periods of three or four weeks, in order that they may familiarize themselves with problems and conditions not to be found on their own Forests. Supervisor Spencer of the Battlement has already completed such a detail, visiting the Leadville, Holy Cross, and Pike Forests for the purpose of studying some timber sale improvement and recreation development work. A trip to the San Isabel, Pike, Colorado, and Medicine Bow Forests has been scheduled for Supervisor Sweitzer.

It is planned to have enough of these details so that each supervisor will make a study of conditions of other Forests at least once in every two or three years. Supervisors are given a definite program of things which they will study, the program being arranged in conference with them and shaped partly by their desires of the things they should see, partly by the judgment of the District office of the things that it will be well for them to investigate, and partly by the opportunity afforded on the Forest they will visit. During the time of the detail they act as members of the District office, and are instructed to report directly to the District Forester by memoranda on the phases of the work which they investigate.

District 3 - Southwestern District

Secretary Houston, on his recent trip in this District, visited the Hull Tank Ranger Station on the Grand Canyon Division of the Tusayan Forest occupied by Ranger Moore. The station was in ship-shape order, and on his return Ranger Moore found awaiting him a card from the Secretary with expressions of regret at having missed him and words of commendation on the neat appearance of the station.

Heavy rains have occurred on the Carson Forest during the past few weeks, and at times assumed the nature of cloudbursts. Roads and bridges have been badly washed out and travel greatly impeded.

Scaler Perry reports that the heavy rain on July 3 played havoc with El Rito Creek. Thousands of trout were beaten to death and cast out on the creek banks. Large fish were found that had been cut to pieces by being pounded on the rocks.

Robert L. Deering is now in charge of the Prescott Forest, and Edward G. Miller has assumed charge of the Coconino Forest.

A slippery sidewalk and Supervisor Mullen had an argument recently. Mr. Mullen reports a broken arm.

District 4 - Intermountain District

Miss Ruth Morris, clerk on the Toiyabe, has entered the ranks of forest fire fighters. On July 6 a brush fire was reported, the Supervisor was absent, and the ranger was at the other end of his district. So Miss Morris got together a crew and the necessary tools, grabbed an automobile, and hurried to the fire. The fire was soon extinguished, after having burned over but five acres.

The fire was along the boundary, and was caused by fire getting away from a hundred-year-old Indian who was doing the family washing. A sudden shift in the wind scattered the fire, which soon got beyond the control of the Indian, who in his feeble condition was unable to cope with it.

Mark Anderson, grazing examiner, and a member of the Forest Service for the past eight years, has resigned to go into private business at Pocatello, Idaho.

Ernest Winkler, inspector of grazing, has just returned to Ogden from an inspection trip on the Weiser. He reports that the stock is in excellent condition, but that the range is extremely dry and a shortage of forage is imminent unless there is some rain soon.

District 5 - California District

The members of the Shasta Forest celebrated the Fourth of July by staging a forest fire for a motion picture company. The celebration was at McCloud, and a large crowd was on hand, coming from all the surrounding country.

One of the Universal's companies, comprising some 75 people, is now filming a Canadian logging story, and in return for cooperation in the big forest fire scene the director offered to present the Service with a 500-foot reel, complete with titles, etc.

The scenario, prepared by Mr. Hammatt, follows the adventures of "Tom Tourist," who, while changing tires, carelessly tosses his glowing cigarette into the dry brush beside the road. The fire is discovered by Ranger Archie Arson, who, after calling for help, tracks Tom and his friends (by means of the telltale patch on a rear tire), catches them just as they are leaving a nearby town, and persuades Tom to make a $50 present to the local justice of the peace.

In the meantime Supervisor Sloane and his crew in their trusty truck (the Shasta has a new one, of which they are justly proud) arrive at the scene of the fire and get it under control in record time.

Archie, after seeing Tom pay his fine, shows him how to break his match in two, and how to put out his cigarette before throwing it away.

Twelve elk were turned loose on the Laguna area last month. The turning loose was not altogether without excitement. The last elk to be liberated did not take kindly to the suggestions as to the direction he should take. One of the helpers moved his horse toward the elk in an effort to turn him. The elk gave every indication of being willing to meet him more than half way, but the horse did not stay to await the collision. Then it was tried on foot. The elk rushed forward and knocked down the footman, who fortunately was not hurt, although the elk made several attempts to jump on and kick him. The elk was then allowed to choose his own range, and no further attempts were made to direct his travel.

Flying has become very popular in this District, and every man who has made a flight in connection with the aerial patrol has felt called on to let his fancy loose and write an account. Supervisor Kotok's account adds novelty and interest because of a marked frankness as to his feelings. He reports that his trip was made interesting by the pilot's giving him the benefit of many fancy stunts, the kind that please the crowd below. Mr. Kotok did not mind the loops and dives, but he does draw the line at Immelmann stunts.

The Laguna recreation area on the Cleveland Forest is popular. There were 350 registrations at the station on the area from noon July 3 to midnight July 4.

George R. Goergens, motion picture operator for the Department, was slightly hurt in an airplane mishap while filming the airplane patrol in southe California. After a few days in the hospital Mr. Goergens has continued on his way to Washington.

J. D. Maxfield has returned to San Francisco with the exhibit material used at the Santa Barbara Fiesta. He reports a good show and big crowds. Thirty-six hundred people were tallied in the Forest Service booth on the night of July 2.

Post offices at Sacramento, Fresno, San Francisco, Los Angeles, and San Diego are now using two cancellation stamps, one "Help Prevent Fires" and the other "Take Your Vacation in the National Forests."

District 5 - California District (Cont.)

A big truck operated by the Southern California Automobile Association has just completed a tour of the Angeles, Cleveland, and Santa Barbara Forests. This special tour was made to erect the "Help Prevent Fire" signs (enamel) at the many locations selected by the supervisors concerned. The signs were manufactured and erected by the Automobile Association at their own expense. Credit for the arrangements is due Supervisor M. R. Tillotson.

Thirty days work on the Government road now in process of construction down the Salmon River on the Klamath Forest, or a fine of $25 each, was the sentence just imposed upon P. E. Morris and James Fairchild, formerly of Long Beach, Cal., by Justice of the Peace D. W. Fuller. And all on account of a little faun. The Morris-Fairchild home - a mountain ranch - seemed to have a fatal fascination for the spotted creature. It appeared on the edge of the fields regularly each morning. It fairly haunted the trail leading from the road to the back door of the house. It even refused to be scared away. Finally, some neighbors, pitying its plight, caught and fed it. They also notified Forest Ranger Noah Coleman of its actions. Coleman, a mountaineer, at once made an investigation of the Morris-Fairchild residence. Deer meat - out of season - was found. Morris confessed to having the meat in his possession and paid his fine. Fairchild admitted killing the faun's mother, and is now working on the Salmon River road in order that he may satisfy the sentence imposed by Judge Fuller.

Forest Products Laboratory

W. D. Brush of the Washington office spent a few days with us last week.

H. P. Burden has arrived from Washington, and will be permanently assigned to the Laboratory.

Such is fame. The box~~-test~~ing work is apparently attracting attention. The other day a letter of inquiry was received asking for detailed information on the course in "boxing."

H. D. Tiemann visited the Johnson Chair Company's plant last week. The company plans to install water-spray kilns to dry oak furniture stock.

Another carload of cypress logs has been received. The shipment consisted of twelve pieces, ranging from 16 to 24 feet in length, and totaling 5,292 board feet; it cost $30 per thousand feet.

P. R. Hicks has just completed a selection of photographs showing the war activities of the Laboratory. A full description is typed on the back of each picture. The set consists of 16 general views, 93 of timber tests, 48 of box tests, 35 of preservation work, 11 of propeller work, 28 of timber physics, 11 of pulp and paper, and 5 of derived products work, making a total of 247 pictures. One set is to be sent to the Washington office for transmittal to the Pictorial Section of the War College, which requested it. Similar sets are to be bound and sent to Washington and the Districts. One set will be retained for the Laboratory.

D. G. White is just back from a trip South and East, and has the following to say: In eastern Tennessee he secured eight thousand feet of virgin white ash from the Slick Rock watershed holdings of the Babcock Lumber Company. This tract contains some of the very best timber to be found in the southern Appalachians. Practically all species east of the Mississippi River are represented. Mr. White reports having seen a number of yellow poplar trees over six feet in diameter, also one white ash 5½ feet in diameter and another 6½ feet in diameter, with a clear length of about 60 feet.

At Malien, West Virginia, twelve thousand feet of yellow poplar, and at Marsh Hill Junction, Pa., eight thousand feet of white ash were secured.

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WEEKLY BULLETIN

Forest Service - Washington Office

(Not for publication)

August 4, 1919.

Aerial Forest Fire Patrol in California

During the six weeks of aerial patrol ending August 2, 56 fires have been discovered in the California forests. The aviators from the three flying stations, Mather Field, Sacramento, March Field, Alessandro, and Rockwell Field, San Diego, have made 373 flights, a distance of 45,376 miles, in 38,545 minutes. To this is added the work done by the U. S. Army Balloon School at Arcadia, where they have maintained in the air night and day an observation balloon similar to that used on the Western Front.

Aerial Surveys

The availability of private airplanes for aerial surveys is indicated by an advertisement recently carried in some eastern newspapers. An aerial survey company solicits contracts to photograph and survey timber, pulpwood, and water areas, cities, and towns anywhere in the world. Also to detect and report forest fires, and to distribute circulars for national propaganda or for private advertising.

Some time ago several of the new England State foresters had their interest in aerial forest fire patrol in cooperation with the Air Service of the War Department brought to a high degree of expectancy, but unfortunately the bottom fell out of the scheme when the appropriations for the Air Service were heavily cut by Congress. The money made available was not sufficient to permit this project.

Lumber Production in 1918

The lumber cut of the United States in 1918 was 29,362,020,000 feet, as reported to the Forest Service up to June 15, by 14,753 mills. The complete total cut is 31,890,454,000 feet, based on the assumed operations of 22,546 mills. The computed cut in 1918 is 11 per cent smaller than the computed production in 1917.

A comparison of the computed cut of several of the larger general producing regions in 1918 with the figures for the preceding year shows a smaller output by approximately 20 per cent in the yellow pine group of states, a decrease of 19 per cent in the North Carolina pine group, and of 9 per cent in the Lake States. An increased cut of 2 per cent is noted for Oregon and Washington.

The reported and computed cut by species is shown in the following tabulation:

Kind of Wood	Production Reported quantity feet b. m.	Computed quantity feet b. m.
Total	29,362,020,000	31,890,494,000
Yellow pine	9,941,997,000	10,845,000,000
Douglas fir	5,819,141,000	5,820,000,000
White pine	1,968,474,000	2,200,000,000
Oak	1,658,714,000	2,025,000,000
Hemlock	1,696,493,000	1,875,000,000
Western yellow pine	1,707,784,000	1,710,000,000
Spruce	980,561,000	1,125,000,000
Maple	696,986,000	815,000,000
Gum	651,545,000	765,000,000
Cypress	578,026,000	630,000,000
Redwood	445,231,000	443,231,000
Chestnut	344,929,000	400,000,000
Birch	316,101,000	370,000,000
Larch	333,243,000	355,000,000
Beech	255,440,000	290,000,000
Yellow poplar	241,693,000	290,000,000
Cedar	230,476,000	245,000,000
Tupelo	201,103,000	237,000,000
White fir	210,750,000	213,000,000
Basswood	174,661,000	200,000,000
Elm	166,481,000	195,000,000
Cottonwood	148,327,000	175,000,000
Ash	147,414,000	170,000,000
Sugar pine	111,800,000	111,800,000
Hickory	89,405,000	100,000,000
Walnut	87,305,000	100,000,000
Balsam fir	65,402,000	82,000,000
Sycamore	26,283,000	30,000,000
Lodgepole pine	12,176,000	12,500,000
Minor species	56,079,000	60,963,000

Forestry at Middlebury College

Middlebury College, in Vermont, has just appointed E. T. Terry, at one time in the Forest Service, but more recently and for some time professor at the Colorado School of Forestry, professor of forestry and supervisor of the 25,000 acres of forest land bequeathed recently to the institution. In this dual capacity Professor Terry will have a good chance to teach and practice forestry.

Seeing America First

District Forester Kneipp received the following letter from a vacationist who followed the advice of the District Office to partake of the recreational advantages to be found on the Forests:

Seeing America First (Cont.)

"July 15, 1919.

I want to express my appreciation for the work you are doing in providing conveniences for campers in this vicinity. The camping grounds are the poor man's paradise. We spend about six weeks in the Forest every year, and I am sure that this work will be appreciated and have the approval of every one that knows about it. This place is new to me this year, and I came here because I heard of the work you are doing, and I am passing the good word along. In time the beautiful camp grounds of Idaho will be known far beyond the borders of our State.

The natural camping resources are practically unlimited in this section, the scenery can scarcely be excelled anywhere, and it wouldn't surprise me to see, in a very few years, pleasure seekers from every State in the Union visiting the playgrounds of Idaho.

Again expressing my appreciation, I beg to remain,

Very truly yours,

M. Mattson."

Washington Notes

Capt. John D. Guthrie dropped in to let us know that he has left Russia and is back on good American soil. Just before leaving Russia Captain Guthrie was decorated with the Russian Military Order of St. Anne for "splendid work and very valuable services rendered to Russia." Captain Guthrie will be ready for duty with the Forest Service as soon as he has made a short visit in Virginia.

C. A. Lindstrom, who has been in France for the past three months piloting the Government exhibits sent there for the benefit of the A.E.F., has got back home.

Forest Products Laboratory Notes

A recent issue of the bulletin distributed by the Newsprint Service Bureau was printed on paper made at the Laboratory by the pulping of cotton hull fiber and conversion of the pulp to paper. Pulp made from second cut cotton linters and hull fiber is well suited for the manufacture of book, writing, blotting, cover, and other high grades of paper, and is equal in quality to the highest grades of paper stock.

A million-pound testing machine is coming. The Secretary has approved the contract. The machine will be built by Ruhle Bros. at a contract price of $20,500, f. o. b. Madison, and is to be delivered in nine months. The machine will be of the vertical, two-screw type, with screw length sufficient to accommodate columns thirty feet long.

District 1 - Northern District

C. H. Adams, Assistant District Forester in Grazing, has resigned from the Forest Service after thirteen years of service. Mr. Adams is now with the Spokane and Eastern Trust Company, whose business is bonds and livestock loans and territory covered extends from the Columbia River to the Dakotas. Grazing matters are Mr. Adams' specialty and he rendered excellent service to the Government during the years he was in the Forest Service.

Two sheep herders were arrested last week by Forest officers for starting fires on the Beaverhead. These are the first arrests made under the new State law. One of the men pleaded guilty and was fined $50 by the Justice at Dillon. The second is also expected to plead guilty. As we go to press he is still in jail thinking it over.

John F. Forsythe, just back from military service in France, will not return to the Forest Service. Mr. Forsythe was supervisor of the Kaniksu at the time he left to join the army, and now on his return finds a remuneratively more attractive job with the Dalkena Lumber Company. He entered the Service as forest assistant in 1911, and passed through the successive stages of forest examiner and deputy forest supervisor to forest supervisor.

District 2 - Rocky Mountain District

There has been an exodus of Forest Officers from this District to District 1 to help out in the serious fire situation. The following are now on duty there: Supervisors Cook, Conner, Higgins, and Hamel, Forest Examiners McLaren and Kreuger, Rangers Donnery and Coe, and Clerks W. R. Fraser, Creed A. Neeper, and Edmund Couch.

District Engineer Mendenhall and Assistant District Engineer Brownlee have just returned from a trip through the Bighorn Forest, where they walked 61 miles and rode horseback 20 miles, making a comparison between the present proposed location of the Buffalo-Tensleep Road and a possible location over Muddy Pass.

Forest Examiners Johnson and Hutton made an examination of the Turpin Creek burn on the Medicine Bow, an area of about 1,000 acres which was burned over in 1915. The fire was so destructive that no reproduction has come in, which is contrary to the usual case following fires in lodgepole pine stands. On the rough ridges practically all of the soil has been burned off; but on portions of the area, where the mineral soil is exposed by the fire, it will probably be possible to reforest by direct seeding using the broadcast method. An attempt to do this will probably be made this fall.

The Brooklyn Eagle travel party, consisting of 125 people, spent several days in this District during the week of July 21. On that day Forest Examiner F. R. Johnson accompanied the party to the summit of Pikes Peak and explained the work of the Forest Service in the Pikes Peak region. Two days were spent in the Denver mountain parks and in the Rocky Mountain National Park, after which they spent a part of a day in the Cache La Poudre Canyon, the guests of the Commercial Club of Fort Collins. On this day Supervisor Wheeler and Assistant District Forester Fred Morrell accompanied the party and had an opportunity of presenting the National Forest work. Supervisor Allen of the Shoshone Forest plans to accompany the party from Cody into the Yellowstone.

This party is under the management of H. V. Katterhorn, managing editor of the Brooklyn Eagle, and as most of their time will be spent in National Parks a number of Park Service officials are accompanying the party.

The recent canvas of the forage conditions throughout the District, in connection with the severe drouth situation especially in Wyoming, parts of South Dakota, and westward, showed that there will not be any necessity for more than the usual shipments out of Colorado; but that large numbers will necessarily have either to be shipped to market or provided with other pastures from western South Dakota and the greater part of Wyoming. General reports show that fully 75 per cent of all kinds of livestock will have to be moved out of the greater part of Wyoming, and that a similar condition exists adjacent to the Black Hills Forest.

Inquiries are being received at the office for the relief that must be had this fall and winter. We have had no report of any necessity for actually moving livestock from the National Forests, and that probably will not be necessary. The critical time will come when the stock leave the Forests at the close of the grazing season. A number of people are anticipating that time and are seeking other pastures. Through newspaper publicity in the Denver papers we have been able to locate some pastures in southwestern Kansas, and some information regarding New Mexico has been received from the Albuquerque Office of Grazing. All information is transmitted to the Wyoming supervisors promptly, and report has just been received that a Shoshone permittee has accepted a 2,500-head cattle proposition in southwestern Kansas after going down and looking it over. In fact, he thought so much of it that he has taken an option for the following year. We hope to be able to place others.

District 3 - Southwestern District

Word coming from the Lincoln Forest seems to indicate some unusual activities. This is the report:

"Rangers Wingo and Brubaker are engaged in leveling and seeding to lawn grass a part of their station yards, this improvement is to be further supplemented by the setting out of rose bushes and planting of flower seeds. For fear they may later attempt to take full credit for this, it seems well to add that their part of the work is only that of laborers, their wives planning and directing the work." To this the District office adds the following comment:

Of course everyone knows that many rangers' wives are the real power behind the throne. Here is a new activity for them. Ninety-nine per cent of all the ranger stations in the District could be improved one-hundred per cent in attractiveness by planting rose-bushes, grass, and flowers. Let's have some more items from the field on stunts of this kind.

Once you get into it, there is real fascination in making things grow, and the first seedling nasturtium that pokes its head up through the earth produces a sensation akin to that which comes from the arrival of a new baby. Fred Plummer, in his famous poem, said that the forester makes two blades of grass grow where only one grew heretofore. This fits ranger stations as well as the open forest, and life at the stations will be vastly more pleasant when they all have the air of cultivation that trees and shrubs and flowers produce.

The whole emphasis of the improvement program is being placed on giving better quarters to the field men. To supplement this program, how many field men will come across with gardening programs?

Right now this office is trying to devise an arrangement for supplying fruit trees to ranger stations.

The Lincoln timber survey was completed on June 30. 80,000 acres were cruised and mapped at an approximate cost of 5 cents per acre. Forest Examiner Marinus Westveld was in charge of the project. The cruisers were H. Norton Cope, Robert Salton, Lyman Taft, and Evan W. Hadley. Lee C. Daves and Marinus Westveld did the mapping control, Haynes Howell and George W. Kimball the typography. This is the first large scale timber reconnaissance that has been done in this District for several years.

The Tusayan Forest has just sold 5,000 cords of juniper and pinon cordwood at 46 cents per cord and 15,000 juniper fence posts at 7 cents each.

M. W. Talbott and C. K. Cooperrider have completed the field end of the grazing reconnaissance on the Williams Division of the Tusayan and are now at work on the final report to get the data in shape for use during the present grazing season.

Building operations on the Coleman Lake and Williams recreational area will soon be under way. The necessary material for fireplaces, tables, etc., has been purchased.

From the Black Ranger District on the Gila Forest comes the report of two big western yellow pine trees - one, 12.1 feet, and the other, 12.8 feet in circumference. Can you beat it?

The Arizona Wool Growers' Association, at its meeting in Flagstaff, on July 5, voted in favor of Federal grazing control on the public domain in preference to State control.

An extensive investigation of the damage caused by sheep to western yellow pine reproduction is now under way and will be continued for at least a year. Forest Examiner George W. Kimball is in charge of the work, and is assisted by Forest Examiner Marinus Westveld. The first Forest to be covered is the Tusayan.

It has been evident for a number of years that sheep were damaging reproduction, but the extent of the damage has never been ascertained. Hitherto the experiments have been conducted on enclosed and open sample plots. The present study will be made on extensive sheep ranges whose history for several years past is well known, and, to give a basis for determination of damage, a similar study will be made in adjacent pastures from which sheep have been excluded. On both types of land, mechanically distributed sample plots will be laid out and a census of the seedlings taken.

Preliminary studies of this kind have already shown startling results, and it is anticipated that the present study will afford conclusive evidence as to the areas on which sheep grazing causes excessive damage.

The making of trail signs is going to be one of the jobs for the coming winter. Instructions have been sent out by the District Forester calling for data on 250 trail and road signs for Forest use.

District 3 - Southwestern District (Cont.)

F. C. W. Pooler and J. C. Kircher recently attended a meeting of the Santa Fe Chamber of Commerce called to discuss the proposed creation of the Pajarita National Park, which is to include the Bandelier National Monument on the Santa Fe Forest.

The movie expedition headed by George R. Goergens, motion picture operator for the Department, into the fastnesses of the Santa Fe is reported to have been a success. The movie subject was the recreational opportunities on the Santa Fe. The scenes filmed include old Santa Fe, the De Varges day procession, and local color in the way of Indians, wood-carrying burros, crooked streets, etc. At the Bandelier ruins a five-foot rattler performed vigorously for the camera. Mr. Goergens also got shots at trail and road building, fishing, camping, summer homes, and a skiing party at an altitude of 12,000 feet.

Lightning struck the Cedar Glade ranger station on July 17, badly damaging one room and the telephone. Ranger Smith and his two horses were knocked down by the bolt.

The preliminary hearing of Estenbun Munios on the charge of criminal grazing trespass was held before U. S. Commissioner Murphy in Flagstaff on July 12. Munios was bound over to appear before the federal court at Prescott on August 18 and released on $500 bond.

District 4 - Intermountain District

W. W. Eggleston, Botanist in the Bureau of Animal Industry, is in this District at present. Mr. Eggleston is looking up the botanical range and distribution of certain species of astragalus, which is now believed to be poisonous to livestock.

C. F. Korstian is now on the Payette Forest supervising the remeasurement of numerous sample plots established in 1910.

Assistant District Forester Morse is in Idaho making a circuit of his group of Forests.

District 6 - North Pacific District

Investigation into the cause of the Anderson Creek fire, in the Crater National Forest, disclosed the fact that the Salsig Lumber Company had been operating a donkey engine equipped with a homemade spark arrester entirely inadequate for stopping sparks. On July 14 a big fire started in a snag and burned over three hundred acres. W. W. Salsig, manager of the lumber company, plead guilty before Justice Taylor of Medford, and was fined $25 and costs.

J. J. Winningham and G. F. Eckles are alleged to have set fire to a bee tree on the Crater. They thought they had put out the smudge, but later the fire spread over about twenty acres.

William Bunch, Roy Dysert, and Joe Dysert, all of Kerby, Oregon, failed completely to extinguish their camp fire at Dead Horse Camp at the head of Sucker Creek, Thursday, July 24, and as a result were arrested, tried, and fined $5 and costs on July 28 at Justice Holman's court. These men had been camped at Dead Horse camp ground, and at about 7 o'clock on Thursday broke camp and moved to another camp a mile or two away.

Forest Assistant N. L. Cary, who has just completed the field work on his Sitka spruce study, reports finding a specimen of this tree 16 feet in diameter breasthigh, on the Olympic. This unusually large spruce was growing on a level, well-drained bench of rich alluvial soil near the Soleduck River, surrounded by other very large, stagheaded spruce. The tree has a rather poorly defined basal swell, a short, cylindrical bole, and large, heavy-limbed side branches. The top has been broken off about one hundred and fifty feet from the ground. This is the largest living Sitka spruce yet reported in the District.

The radio wireless equipment loaned by the War Department for experimental use on Mount Hood has arrived. Telephone Engineer Allen is trying it out by a series of experiments over short distances in the vicinity of Portland. He plans to take the outfit to the Mount Hood region sometime next week and install one set at the lookout station on the summit of the mountain and the other at Zigzag ranger station. It is believed that this will be the first time an instrument of this sort has ever been tried out on a snow mountain, and the outcome of the experiment is awaited with considerable interest.

District 6 - North Pacific District (Cont.)

Experiments that are being carried on with carrier pigeons already indicate that the birds will be of considerable value in fire protection work. Forest Examiner Sproat recently released six carriers at East Lake at intervals. The birds took from forty to sixty minutes each to reach Bend, about fifty miles away.

James Frankland has resigned from the Forest Service to accept a position as assistant engineer for the Tacoma port commission. Mr. Frankland has been connected with the Forest Service in District 6 for the past seven years and leaves a splendid record. During the war he went to France as a captain in the 69th Artillery, coming back into the Service soon after his return to America.

Dr. John T. Paris, editor for the Presbyterian Board of Publications, with headquarters at Philadelphia, who has spent nearly three weeks visiting National Forests and parks and other points of interest in Oregon and Washington, left for the East last week. Forest officers cooperated with him by suggesting his itinerary while in the District and giving him other assistance. His forthcoming book on "Seeing the Far West" will probably contain a chapter devoted to recreation on the National Forests.

Clyde R. Seitz, who has been supervisor of the Cascade for the last eleven years, resigned June 30 to engage in private contract work. Mr. Seitz received his appointment from the Civil Service eligible list for supervisors in the days when a special examination was given for supervisors and deputies. He began his work as deputy supervisor on the Whitman in 1907, soon after becoming supervisor on what is now known as the Siuslaw. In 1908 he took charge of the Cascade, which under his administration has become almost a model Forest. Besides being a good administrator, Mr. Seitz is a mechanical genius and has devised a number of articles which are now in use on the various Forests of the District. Perhaps the best known of these is the Seitz portable range, a camp range specially designed for transportation on horseback. Mr. Seitz' friends in the District are sorry to see him leave the Service and their best wishes go with him in all that he undertakes. For the present, Forest Examiner R. S. Wallace is acting supervisor of the Cascade.

District 7 - Eastern District

The Natural Bridge Forest reports the completion of a 12-mile telephone line extending from Buena Vista to Alto, Virginia.

The recent heavy rains have seriously interfered with timber sale operations on the Natural Bridge Forest. The roads are badly washed, and a number of bridges across the small streams have either been washed away or made unsafe for heavy hauling.

A special use permit has been issued to the Roanoke Council, Boy Scouts of America, for the purpose of establishing a Boy Scout camp to accommodate eighteen troops of the city of Roanoke, Va. The period of encampment will extend from July 28 to August 25 of the present year. It is likely that this period will be extended in a few years, and that the camp will also be occupied for week ends at other times during the year. The boys range in age from 12 to 18 years. Twenty-nine army squad tents and a number of mess kits and canteens have been secured. An experienced cook has been engaged for the camp. It is the plan of the council to construct a dam this year. If the project proves successful the movement will be extended so as to include troops of other cities, and permanent buildings will then be erected. The acreage involved is approximately 5½ acres. It is located on the east prong of Elk Creek in what is locally known as Arnold's Valley, about 4½ miles from Greenlee, Va., the nearest railroad station. The location of the camp on the Forest will eventually bring many of the parents of the boys and will add materially to the demand for summer cottage sites and other recreational uses, and will also aid in the development of the section by giving an impetus to the road improvement and creating a demand for farm produce among the local inhabitants.

Forest Examiner J. St. J. Benedict, who has had charge of timber sales and timber survey work on the Pisgah National Forest since September, 1916, has resigned. Mr. Benedict recently purchased a fruit ranch in the Hood River section of Oregon. He has been with the Forest Service continuously since 1907.

Forest Examiner W. J. Damtoft will succeed to the position vacated by Mr. Benedict on the Pisgah. Mr. Damtoft has been assigned to the Pisgah since March, 1919, in charge of Acquisition appraisals, and also in charge of a large timber sale operation on the Mt. Mitchell division.

The Pisgah will soon have its first summer hotel. A permit has been issued to George Weston to construct a hotel, a number of bungalows, a swimming pool, a dancing pavilion, and a garage. The total outlay will be between $7,500 and $10,000. The main building will be located just above the Pisgah motor road at the foot of Big Bald Mountain. The view from the front is one of the best to be had in the whole Forest. The buildings will be of rustic design with a temporary canvas roof for the bungalows. The water supply will be pumped up 500 feet from a series of inexhaustible spring heads.

Recent investigations of the streams in the Pisgah Game Preserve bring to light some facts of interest. One is that the mountain streams can be successfully restocked in spite of the handicap of destructive lumbering. Davidson River was stocked three years ago with rainbow fingerlings. It has had additional stocking each year since. This season the results are manifest, because this stream has more trout than ever before, and the catch has been heavier and the size of the fish more uniform, running from 9 to 14 inches. Another fact is that streams which originally were good for brook trout and which were kept wholly for brook trout culture have not come up to their former reputation. The working plan prepared by representatives of the Bureau of Fisheries called for 75,000 brook trout to be placed in these streams, but since then (1916) the lumber operations have opened up the streams to sunlight and the temperature of the water is higher during the day than was the case prior to cutting. The wash of soil into the streams may also have had a good deal to do with the failure of the brook trout to thrive. From now on, until a second growth of timber restores these streams to their normal condition, only rainbow trout will be planted. On Lookingglass Creek, where lumbering was completed two years ago and where brook trout have been planted, the waters are full of fish of all sizes. The investigations show that if the Pisgah experiment fails it will not be because the idea is not basically sound, but because of insufficient protection, and because the number of fry and fingerlings needed in restocking can not be obtained. We have never yet been able to obtain from the Government hatcheries in the East a full allotment called for by the working plan. Western North Carolina needs one or more hatcheries. Pisgah itself could readily plant all that a small hatchery could raise.

Is this a new idea as an entrance sign? Where the Pisgah motor road first crosses the Forest boundary the line is a small creek whose bed is filled with boulders of all sizes. A large boulder, 2 feet thick, 3 feet wide, and 5 feet high, and worn smooth by the action of water, was found and put in place at the edge of the creek by the side of the road. Forest Examiner Damtoft, wielding a skilful chisel, carved as follows:

ENTRANCE
Pisgah National Forest
and
Game Preserve

The rock is large enough to catch the eye of the motorist at once upon approach to the boundary, but at the same time because of the nature of the surrounding objects, such as the creek, companion boulders, and a hemlock background, it appears as if placed there naturally.

It will be left in place a few months at least, in order to test the public's opinion of its fitness.

E. L. Lindsay, in charge of timber sales on the Arkansas Forest, has resigned to accept a position with the Pioneer Pole and Shaft Company of Piqua, Ohio. This company is engaged in the manufacture of spokes and rims for automobile wheels.

Acquisition

Forest Ranger E. B. Stone, Jr., has been detailed to timber examination work on the Shenandoah Forest.

Assistant Forest Ranger B. M. Lufburrow has returned from France. He is now acting in charge of the Alabama Forest.

C. E. Burrage, who has recently returned from France, has been appointed Forest ranger and is temporarily assigned to timber examination work on the Pisgah Forest.

Forest Assistant F. T. Murphey, formerly on the Carson Forest, District 3, and just back from France, now belongs to Acquisition and has been detailed to timber examination work on the Natural Bridge Forest.

National Forest Examiner W. E. Hedges has been transferred from the Natural Bridge Area to the Unaka Area, with headquarters at Johnson City, Tenn. He will make examinations on the Unaka, White Top, Mt. Mitchell, and Boone Purchase Areas.

Capt. R. C. Hall will not return to the Forest Service. Instead he goes to the Internal Revenue Bureau as valuation expert of eastern hardwoods.

Examiner of Surveys W. H. Sullivan has been temporarily detailed to the Washington office from the Pisgah Area to assist in the office work in connection with the lands that have been surveyed for purchase this spring.

Examiners of Survey Carl F. Muzzey and Paul G. Jenny and Transitman R.E. Pidgeon have been transferred to the White Mountain Area to make the surveys of the large tracts of land which were recently approved for purchase by the National Forest Reservation Commission.

Examiner of Surveys James Denman has resumed work on the Olmsted lands and adjoining tracts in western North Carolina, and it is expected that this project will keep him employed the entire field season. The lands involved comprise about forty thousand acres, part of which has already been surveyed and about three-fourths of which will be acquired either by direct purchase or by condemnation.

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WEEKLY BULLETIN

Forest Service - Washington Office

(Not for publication)

August 11, 1919.

A Challenge

Supervisor Swift, of the Crook, has issued a defi to all other Forests to show longer periods of service than four old timers on the Crook Forest. He accompanies his challenge by the following statistics: Ranger Swift has been a member of the Forest Service since January 21, 1907, Woolsey since May 24, 1907, Taylor since May 27, 1908, and Kirby since July 20, 1909.

The Editors of the Weekly Bulletin call on the other Forests to come forward with statistics. We believe such figures will be a good antidote to the constantly recurring items of resignations and we feel sure that some of the other Forests can show long periods of service for many of their men.

Aerial Forest Fire Patrol Extended to Oregon

The aerial forest fire patrol has been extended to cover a portion of the Forests in Oregon. Headquarters of the squadron has been established at Salem, Oregon, and for the present will consist of five officers and seven enlisted men operating eight airplanes.

Rifle Matches at Caldwell

Many members of the Forest Service are interested in the National Rifle Matches which are now under way at Caldwell, N. J.

Acting District Forester Rutledge of District 1 was appointed Captain of the Montana Team by the Governor of Montana, but was unable to participate in the match on account of the very serious fire situation.

R. V. R. Reynolds, of the Washington Office, is captain of the civilian team of 16 men representing the District of Columbia. Captain Reynolds hopes to duplicate the success of last year's team at Camp Perry, Ohio, where it captured the Hilton Cup, the first winning of the cup by a civilian team.

New Legislation

Senator Jones, of New Mexico, introduced a bill in the Senate to restrict the creation and enlargement of National Forests in Arizona and New Mexico to Acts of Congress and to take away this power from the President, as provided by the Act of March 3, 1891. The bill passed the Senate without debate and now goes to the House for action.

This proposed legislation, if finally enacted, will then add Arizona and New Mexico to the states of Colorado, Wyoming, Montana, Idaho, Washington, Oregon, and California, in which the creation and extension of National Forests, except by special Acts of Congress, is already prohibited.

A Job in New Jersey

The State firewarden for New Jersey announces the existence of a vacancy in his firewarden organization, and is looking for a qualified technical forester to fill the job.

The work of this position is the general administration of forest fire matters, over a territory which comprises about one-third of the State, and his duties include the attendance at large and serious fires, investigation of the causes, area and damage of fires, responsibility for the personnel of the local firewarden system, development of cooperation with local private interests, and general propaganda with reference to fire prevention.

Opportunities for forestry propaganda and technical work will come during slack periods in the fire prevention work. Possibilities for advancement are through the positions of assistant firewarden and firewarden to State forester. Headquarters will be at one of the larger towns or in a rural community as the appointee may elect.

The State firewarden sets forth as further qualifications, personality and ability to meet people without diffidence, to inspire confidence in his judgment, and to compel respect for his direction.

The office of the State firewarden is in the State House at Trenton.

Cooperative Funds for the Laboratory

Reimbursement of $82,316.51 was made to the Forest Service during the fiscal year ending June 30, 1918, by various Government agencies for work done under the auspices of the Branch of Research in Forest Products and Forest Investigations. The variety of the work done by the Forest Service is indicated in the following table:

Project	Cooperator	Amount Reimbursed
Kiln Drying	Signal Corps	$37,691.86
Wood and Glue	" "	2,238.81
Monocoque Fuselage	" "	11,516.78
Airplane Parts	" "	1,850.79
Exam. Timberlands--Tenn.	" "	467.39
Inspection Airplane Stock	" "	480.83
Box Containers	Ordnance	9,766.19
Walnut Study	"	3,076.60
Spruce Production--New Eng.	Navy	2,350.28
Laminated Woods	"	9,999.81
Navy Lumber Spec.	"	546.88
New England Red Oak	Field Artillery	104.03
Tannin Study	Shipping Board	1,698.54
New Eng. Shipbuilding Timber	Eng. Fleet Corp'n	269.26
Treenails	" " "	258.46
	Total	$82,316.51

For the year ending June 30, 1919, there was a greater use made of the facilities afforded. The following table shows the amount of direct allotments a reimbursements:

Project	Cooperator	Amount Allotted or Reimbursed
Box and Packing	Ordnance	$35,233.81
Propellers	Navy	55,000.00
Airplane Parts, etc.	"	63,000.00
Airplane Parts, etc.	War	221,000.00
Walnut Study	Ordnance	9,783.33
Laminated Gunstocks	"	763.43
Chemical Warfare	War	4,492.52
Treenails	Emg. Fleet Corp'n	1,368.18
Locust	Shipping Board	118.98
	Total	$390,760.25

The facilities of the Forest Service are unfortunately not being utilized to so great an extent for peace-time purposes. For the current year the Navy has put up $100,000 and the War Department $40,000.

Forests in Siberia

Agricultural development is retarded in Siberia for the most part by th presence of forest growth, according to a Consular Report just received. It is stated that agriculture is developing but slowly in Siberia and what little development has occurred is for the most part confined to areas which are little wooded or even entirely treeless.

Forests in Siberia (Cont.)

About forty per cent of the populated parts of the country can be classed as treeless or but poorly wooded. In the other regions, agricultural development is difficult on account of the climate, but mainly on account of the timber.

To clear away the forests for agricultural purposes requires so much effort with such small returns in subsequent years that in these forest regions but few families devote themselves to the cultivation of grain as the basis of their economy. The report continues that, as a result, the major portion of the population puts its energy into the use of the forests as a source of immediate wealth.

Flying in the Yosemite Valley

A successful flight to the floor of the Yosemite Valley was made by Lt. E. E. Neubig last week. The start was made from Mather Field. To make a landing the aviator had to gain an altitude of 11,000 feet and spiral down between the walls of the canyon, which are 5,000 feet high and a quarter of a mile wide. Difficulty was also experienced in landing on the field on account of the high trees and wires which surround it. The return to Mather Field was made in 90 minutes; the distance is 90 miles.

This exploit is of interest to Forest officers, as it brings one step nearer the possible use of airplanes on the Forests, where landing places in the mountains are at a premium. It may not after all be impossible to use airplanes in the mountainous parts of the forest, for open areas available for landings are not infrequent.

Seed Storing Experiments

Tests made in the Washington office show that the average germination of four successive tests of the six species of tree seed stored is nearly double for seed stored in airtight bottles over seed stored in any other container. The seed stored in paraffined paper bags has the next highest germination, then that in the paper bag, the cloth bag, and the oiled cloth bag. The seed was stored under fluctuating, indoor, and low temperatures.

Seed stored indoors shows the highest germination per cent, that stored at fluctuating temperature is next, and that at the low temperature is last. There is not a great deal of difference, however, in the germination at any of these three temperatures.

Some of the seed in the airtight bottles was carried over ten years and germination was secured from seed of Pinus ponderosa, Pinus contorta, and Pinus monticola. No germination was secured from Pinus strobus, Pseudotsuga taxifolia, and Picea engelmanni.

National Research Council Cooperates

The increased interest in private forestry has indicated the need for more specific information on growth of cut-over lands and the cost required to produce stands of timber in different sections of the country, and the National Research Council has undertaken an extensive project along this general line. W.N. Sparhawk and W. B. Barrows of the Washington Office have been assigned to this work.

Forestry Conference in the White Mountains

A forestry conference will be held in the White Mountains at Bethlehem, N. H., on September 2, 3, and 4, under the auspices of the Society for the Protection of New Hampshire Forests.

Colonel Graves will address the meeting on the morning of September 3, on the subject of the need for a national forestry program. In fact, the main business of the conference will be the consideration of this program.

The Society is making every effort to get a big attendance at this meeting, and in its publicity is impressing the importance of the problem on every owner of timber and every wood manufacturer.

New Titles

Silviculturist is the title of a new position just created in the Branch of Research. This title is to be given to men engaged in pure silvical research work. The distinction of being the first Silviculturist goes to C. G. Bates, in District 2, who for years has taken a very active part in investigative work and blazed the way in many important investigations.

Washington Notes

Forest Inspector Carter is now in California for a month's inspection trip. Mr. Carter stopped en route in District 3 for a couple of weeks.

Forest Products Laboratory Notes

J. A. Newlin is out on the West Coast where, in cooperation with the West Coast Lumberman's Association, he is busy on the new density rule for Douglas fir.

The elimination of dark-colored oak is a problem confronting manufacturers of high-grade oak office furniture and many requests for assistance have been received recently. Methods of drying are to a degree responsible for the discoloration, and tests are under way to solve the problem.

The following excerpts from two letters on file at the Laboratory are not without interest:

Letter No. 1 was written December 10, 1918, and among other things had to say: "For your information will state the ******* Dry Kiln Company, on the authority of the Forest Products Laboratory, specified in these contracts what these kilns would do in drying green oak. They have not done it and we are very much disappointed in them and don't believe it can be done. However, we are from Missouri and trust your representative will be able to show us."

And now Letter No. 2 contains the following: "This is the best we have seen, and we are now praising the kilns and believe they will do the work."

District 1 - Northern District

In between fires the Forest officers on the Helena found time a week ago to plant 12,000 trout in Tiger Creek and in lakes on the Elkhorn Division.

J. W. Nelson, who hired out to fight fires but failed to do any fire fighting, was arrested at Kooskia, Idaho, for fraudulently obtaining transportation and subsistence from the Government. He pleaded guilty and was fined $25 and costs, which he paid. He is also reported to have had in his possession several hundred dollars in A. B. A. checks, and apparently came from headquarters at Los Angeles.

Joe Boisseneau, a dupe of Nelson's, was also arrested. He pleaded not guilty, but on trial was convicted and fined $25 and costs, making a total of $80. He failed to pay, and was committed to jail for 40 days.

F. C. Wilfong, who has been on trail surveys on the Bitterroot Forest, has been detailed to fire work. Wilfong and his crew of three men had a trying experience during the Selway fire on Crooked Creek. They were trapped at a point where three fires met, and their camp with provisions, clothes, etc., was burned. The men saved themselves by jumping into the Selway River and covering their heads with wet blankets. They spent about 35 minutes so. Of the thirteen horses only one was lost, although the pack saddles were burned off their backs. The horses were saved by having been taken to a bunch grass hill.

District 2 - Rocky Mountain District

The recent rains in northern Colorado and Wyoming have improved the serious conditions existing there. Plans had been made to ship stock, grazed both inside and outside the National Forests, to other states.

In contrast to the northern Colorado and Wyoming conditions, the Forest range and the low ranges outside the Forests in the southern part of Colorado are as good as they have ever been. An interesting fact about the situation this summer is that in the territory in southern Colorado where there was such an unusually large amount of snowfall in the low country last winter there has been a go rainfall during the spring and up to the present time, and this has resulted in

District 2 - Rocky Mountain District (Cont.)

exceptionally good range conditions. In northern Colorado and Wyoming, on the other hand, where there was a particularly open winter with little snowfall in the low country, there has been a severe drouth condition up to the present time.

The infectious disease Hemorrhagic septicemia, affecting both cattle and sheep and apparently very fatal, is being reported from various parts of the District. It is hardly probable that increased losses attributed to this disease are a new thing; it is more likely that the disease has been causing losses in the past but was not recognized. Many of the losses reported in the past years for which no definite cause could be given were probably from this disease.

District Engineer Mendenhall and District Engineer Bright of the Bureau of Public Roads, inspected the Nederland-Ward major road project and report very satisfactory progress. The project is about half completed. It is nine miles long and will cost approximately $50,000. There is administrative need of a road, as the railroad which enters this country will be abandoned in September and the road will be the only outlet for the country and also the only way whereby the ranger can get into the country to administer his district.

A serious fire occurred recently on the area of State timber adjoining the Harney Forest which is being logged by the Warren-Lamb Lumber Company. Approximately two million feet of logs were destroyed and three sections of timber burned over. The fire was entirely confined to the State forest and did not get on the Harney. The brush on the logged area had not been burned, and the presence of this inflammable material had much to do with the occurrence of the fire.

The Norways ranger station buildings on the Michigan Forest have been threatened with destruction by forest fires on three different occasions during the present season. On July 3 a fire came from the south and 60 men were required to get it under control. On July 17 a fire came from the northwest and threatened to spread through the Norway and jack pine timber to the buildings. This fire was checked through the hard efforts of Ranger Green and the timely assistance of a light shower. On July 23 a fire broke out from the old burn and was carried directly toward the timber and buildings by a strong southwest wind. This fire occurred late in the afternoon and was soon put under control by a crew of 25 men and teams.

Supervisor Hilton has the following to report in regard to fires in Michigan. Since the middle of June more forest fires have occurred in Michigan than for many years. The eastern part of the upper peninsula and the upper part of the lower, from Alpena and Kalkaska north, have suffered severely. While it has been impossible to harvest grain in Minnesota because of the flooded conditions in the fields, the part of Michigan referred to (as well as the remainder of the State, though in a less measure) has suffered severely from drought. A period extending from June 15 to the present time (August 4) has been without rain except for very light showers, which have seldom been sufficient to extinguish any fires except those burning upon the open plains land. Fire conditions still remain critical, but a large amount of additional damage is unlikely because a large area has now been burned over. Many towns have been burned; others have been in danger at various times from shifting winds. The town of Newberry was most recently threatened.

The burned area includes cut-over timberlands and comprises forest products of all descriptions, standing timber, mill, camp, and woods equipment, as well as a number of farm buildings and some livestock. The total loss is unknown and figures can only be secured through later efforts upon the part of the State firewardens. The starting of these fires has been laid to various causes, and while the railroads have been largely blamed it is certain that travelers, campers, lumbering and clearing land are all responsible and the large loss is direct due to the failure to extinguish the small fires.

District 3 - Southwestern District

General heavy rains are reported throughout the District, and supervis have been relieved of sending the ten-day fire reports.

Deputy Supervisor Charles L. Rak, of the Coronado, has resigned and will go into the cattle business. Mr. Rak entered the Forest Service in 1908, as Forest guard on the Gila, and became ranger in 1910. In 1912 he left the Service and entered the University of California to study forestry, returning to the Service in 1915 as Forest guard on the Datil. About a year ago he was appointed deputy on the Coronado.

District 3 - Southwestern District (Cont.)

Supervisor Hoyt and Rangers Slosser, Hall, Cummins, and Rogers, of the Sitgreaves, took an active part in a general community man hunt recently. A citizen of the region about 65 years of age lost his way in the mountains, and a general call was made to find him, which was done on July 25, after the lost one had been wandering about since July 19 without food.

To remove the suspicion that the Tonto Forest produces no timber except the giant cactus, Ranger Friebain comes forward with the report of having found some real big trees on the Sierra Ancha district. A Douglas fir is claimed to measure 18 feet 5 inches in circumference and a western yellow pine 16 feet 5 inches in circumference.

Ranger Louis H. Waters, of the Manzano, has just received a citation for "exceptionally meritorious and conspicuous services in Sound and Flash Ranging Service." This is the second citation for Waters; he received the first after the battle of Chateau Thierry.

District 4 - Intermountain District

Inspector of Grazing Jardine and Grazing Examiner Palmer are on a field trip which will take them to the Uinta Forest, the Great Basin Experiment Station on the Manti, and on a visit to the reconnaissance party on the Sevier.

H. G. McPheters of the Office of Engineering, has returned to Ogden from a six weeks' trip inspecting trail systems on the Ashley, Uinta, and Wasatch Forests. On the Uinta Mr. McPheters assisted in laying out the proposed trail system around the Granddaddy Lake country.

The Intermountain record for prompt and effective action in apprehending and convicting a person responsible for leaving fires unattended upon National Forest land is now held by Ranger Harry Heller of the Boise Forest. During the week ending July 24, four separate fires occurred on the P. R. Wilson range, all of which had been started from sheep herders' camp fires. Heller secured sufficient evidence to establish the fact that a Basque named Jose Utnecha was responsible for these fires. On the morning of July 24 Heller and Forest Guard Johnson circled the Bear Creek Ranch for the purpose of locating this man. Before finding him they found two unextinguished camp fires and put them out. At 7 o'clock they found the man, placed him under arrest and rode 30 miles to Rocky Bar where they arrived late at night. Early on the morning of July 25 they took the Basque and their witnesses to Mountain Home, where Heller outlined his case to the United States Commissioner. The Basque was immediately called before the Commissioner and plead guilty to the two counts of the charge. The Commissioner required the Basque to deposit the sum of $350, which was done. The case will follow the formal procedure through the United States District Court, but the result desired has already been secured with promptness, dispatch, and effectiveness. Leaving camp fires or other fires unattended is going to prove a very unprofitable pastime on the Boise Forest hereafter.

District 6 - North Pacific District

Colonel Graves spent July 19 to 25 inclusive in District 6, where he attended conferences with lumbermen at Portland, Tacoma, and Seattle, in the interests of securing a new crop of timber on cut-over lands, and of fire protection. In Portland he addressed also a special meeting of the local section, Society of American Foresters, on the subject of a national lumber and forestry program, and an open meeting of the Chamber of Commerce, on reforestation and protection from fire, including also the preservation of beauty spots and recreation centers.

Associate Forester A. F. Potter has been here on a short visit. During his brief stay Mr. Potter made his first visit to Eagle Creek Camp Grounds.

T. M. Talbott has been spending some time recently on the south end of the Crater, in the Applegate district, collecting evidence against fire trespassers. He has been very successful and we look forward to getting convictions in at least six cases.

A touring party of 75 members which is visiting the National Parks and Forests of the West, under the auspices of the Massachusetts Forestry Association, arrived in the District July 18. Supervisor Sylvester met the party at Wenatchee and accompanied them in their private cars on the trip through the Cascades, giving an explanatory talk en route.

District 6 - North Pacific District (Cont.)

The party visited Rainier National Forest and Park July 21 to 24, and arrived in Portland on the morning of July 25. They visited the Eastern and Western Lumber Company's plant in Portland, where they were much interested in the process of turning large Douglas fir logs into lumber. A 7-foot log was run through the mill while the party looked on. So interested were they in this big stick that Manager Frank Ransome suspended operations long enough for about half the party to photograph the log from various angles. That evening Mr. Jackson addressed the party at the Chamber of Commerce on the work of the Forest Service in this District. Friday they made the Columbia River Highway trip to Eagle Creek Camp Grounds and other points of interest on the way. Sunday evening they left for Crater Lake National Park and the big logging operation at Pelican Bay, on the Crater National Forest.

A sale has been made on the Rainier National Forest of forty acres of Douglas fir timber which was killed by the severe fire near Morton, Washington, last September. The sale involves 1,345,000 feet. The bid prices were $1.37 per M. feet for the Douglas fir, $1.50 for the western red cedar, and $.40 for the western hemlock, which prices are slightly higher than those named in the advertisement.

District 6 has under way the Pathfinder plan for bringing about a freer use of the National Forests as the playgrounds of the people. Information regarding location of trails, information regarding camp supplies necessary, preparation of guidebooks and tour suggestions, establishment of log-cabin guide rooms, equipment service, campers' stores, and camps, are suggested as features of the Pathfinder plan, by William J. Paeth, Forest Assistant, its author. The plan is cooperative, contemplating the organization of all public recreation resources of Oregon. This development of the National Forest playgrounds under the Pathfinder program is expected to be far-reaching in its effects.

While the fire situation in Oregon and Washington is not nearly so serious as in District 1, nevertheless all available hands are fully occupied in one form or another in suppression of fires. A hurry-up call from District 1 for help resulted in the detail of Forest Examiners William B. Osborne, H. L. Plumb, and Fred Matz. A later call from District 1 for additional help was received, but in view of the situation here it was not possible to comply. Adam Wright was sent to the Colville to assist in the suppression of the numerous fires on that Forest. Messrs. Kavanagh and Drake went to the Whitman to assist in extinguishing the Big Creek fire that covered approximately 8,500 acres, while Mr. Buck has been spending the past week on the Rainier, where the situation at present is more serious than that on any other Forest in the District. Mr. Merritt is assisting in the fire situation in the Forests of southern Oregon.

The electrical storm of about a week ago started about one hundred fires in the Forests of the Cascade range in Oregon. With but very few exceptions all these fires were extinguished with dispatch and without the need of employing crews of fire fighters. It was a severe test for the protective forces. Without the assistance of trail and road crews, however, this would not have been possible, not only because outside labor is difficult to secure, but also on account of the time it would require to get men to the fires, most of which were in remote localities. From the Umpqua comes the report that in several instances members of the protective force reached fires that had been set by lightning and were burning in the crowns before the blaze had reached the ground.

On the Crater Forest, where ordinarily from thirty thousand to forty thousand dollars is expended in fire suppression annually, the costs so far this year have been nominal, although to date there has probably been no decrease in the average number of fires. It is evident that the reason for this is the increased protective force and the use of the Forest Service truck that was purchased for fire protection purposes. The value of maintaining small crews of patrolmen at strategic points has been amply demonstrated as a necessity, and similarly the truck has more than paid for itself already.

The carrier pigeons on the Deschutes have been used to advantage on several occasions in connection with the reporting of fires; their use should probably be extended to other Forests as time goes on.

Within a few days Army airplanes will be patrolling the Santiam and Oregon National Forests. Word was received yesterday from Milton Klepper, president

District 6 - North Pacific District (Cont.)

of the Oregon Aero Club, that he had received a wire from General Menoher saying that instructions had been issued to the commanding officer at Mather Field, Sacramento, to cooperate with citizens in forest fire protection. Governor Olcott, of Oregon, is an air "fan" and has been very active in urging the use of airplanes in Oregon for carrying mail and for forest protection purposes. The city of Portland has donated a landing field and will construct a hangar. Two Army ships at Camp Lewis have been ordered to proceed to Salem immediately for the purpose of aerial patrol. Tentative patrol routes on the Oregon and Santiam are now being worked out. We are hopeful that this service can be extended to the Umpqua, Crater, and Siskiyou Forests, the airplanes working from a base at Roseburg. These patrols will involve rather hazardous flying, on account of the extremely rugged country and the lack of suitable landing places.

One hundred herbarium cases have been sent out to the various Forests for use at the headquarters of important ranger station districts. These cases were made in Portland and shipped in knocked-down condition, to be put together at points where they are to be used. They are divided into 18 compartments and have a capacity of about one hundred plant specimens. The cases are constructed of Douglas fir and have a glass door to keep out dust. This is a step in the carrying out of the plan to secure complete classification of range plants on various Forests of the District. This year a special effort is being made to collect specimens of the principal poisonous plants and keep them on file at the ranger headquarters for reference use and for exhibition to the stockmen in the Forest communities.

Tests of the wireless equipment received from the Navy Department, carried on in the vicinity of Portland by Telephone Engineer C. M. Allen, have proved successful through a 5-mile interval. Mr. Allen set up the equipment in the basement of his residence, amidst washboards and canned fruit, and made arrangements with a local radio man to assist him in the test, which proved so successful that the various newspapers of the town were notified that their representatives might witness the instruments in use between eight o'clock and midnight July 17. Mr. Allen held a very interesting reception that night and the reporters were quite enthusiastic over the results obtained by the instruments. Part of the equipment is now on its way to Government Camp, at the base of Mount Hood. It is expected that another test, under actual field conditions, will be possible in a few days. A sectional mast of bamboo, 50 feet tall, will be erected on the summit of Mount Hood, and an effort will be made to carry on conversation between there and the valley below. In tests made by Mr. Allen at his residence it was possible, not only to talk and hear by wireless, but also by holding the wireless receiver close tothe mouthpiece of the regular telephone to carry on conversation through a unit of wireless and the wire line. A number of amateur operators have been listening in at these tests from various parts of Portland and also from several ships on the river.

Eighty-seven cities and towns of Oregon, Washington, and Alaska derive their water supply from the National Forests of the North Pacific District, according to a report just compiled. The estimated population of these towns is about one-half the population of the District.

H. P. Randall, of Waterville, Washington, was fined $10 and costs in the justice court, for leaving a camp fire unextinguished on the Chelan National Forest. Justice of the Peace Porter, who imposed the fine, said that in view of the fact that this was the first case of the sort in Wenatchee and that the provisions of the law were probably not very well known, he would impose a minimum fine but that he wished it clearly understood that this was not the intent of the law as a general rule and that it should not be considered a precedent.

After considerable delay, owing to heavy travel on Alaska boats, Mr. Flory has succeeded in getting passage to Ketchikan for his assignment as superintendent of the Forests of Alaska and has gone to his new work.

The fire situation in the District has not yet become acute, in spite of the fact that there has been considerable fire weather. The most serious thus far reported has been a 600-acre fire on the old burn on Hermon Creek watershed, on the Oregon, whose suppression required a crew of sixty men. This fire was about four miles from the Columbia River Highway. After being put under control once, the change of wind, combined with very hot weather, caused it to escape again and some camp equipment and supplies were destroyed before it could be again controlled.

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WEEKLY BULLETIN

Forest Service - Washington Office

(Not for publication)

August 18, 1919.

Deficit on Account of Fire Expenses

The Secretary has authorized the Forester to create a deficit of $1,500,000 on account of the expenses incurred in fighting the forest fires. Creating a deficit means the authorization to divert for the time being the above sum to fire-fighting purposes pending later deficiency appropriation by Congress of the money so spent. Failure to do so would mean closing up shop toward the end of the year, but Congress knows of the abnormal conditions and the method of procedure is the accepted one in emergencies of this kind.

The total expenditures and liabilities (estimated) for fighting forest fires up to August 20 by Districts follows:

District 1 - - - - -	$1,248,000
" 2 - - - - -	11,008
" 3 - - - - -	70
" 4 - - - - -	95,000
" 5 - - - - -	20,124
" 6 - - - - -	91,600
" 7 - - - - -	00
	$1,465,802

Out of a total fund of $1,650,000 this leaves a balance of only $184,198 for the remainder of the season.

Gas Masks for Fire Fighters

A loan of 2,000 gas masks has been made by the War Department to the Forest Service for use of the fire fighters. The suggestion to use gas masks for this purpose came through a request for masks made by the State Forester of Oregon. The masks loaned to the Forest Service will be sent by express to the Districts, and the distribution is as follows:

1 - - - - -	700
2 - - - - -	100
3 - - - - -	100
4 - - - - -	200
5 - - - - -	300
6 - - - - -	500
7 - - - - -	50
8 - - - - -	50

Receipts for the Month of July

Receipts from the National Forests for the month of July, 1919, amount to $183,157.32 and show an increase of $7,572.34 over the receipts for July, 1918. The receipts for July, 1918, ($175,584.98) in turn showed an increase of $20,631.89 over the receipts for the previous year.

The receipts by Districts are as follows, given in order of amount:

District 2 - - - - -	$36,200.11
" 6 - - - - -	34,112.56
" 5 - - - - -	32,478.59
" 1 - - - - -	28,212.26
" 3 - - - - -	20,394.69
" 4 - - - - -	20,366.86
" 7 - - - - -	11,392.23

Receipts for the Month of July (Cont.)

The receipts by activities, with indication of increase or decrease over similar period for 1918, are as follows:

Activity	Receipts	Increase	Decrease
Timber Sale	$133,348.81	$1,145.07	
Timber Settlement	--		$ 570.41
Timber Trespass	75.78		731.35
Grazing - C & H	18,551.82	4,310.01	
- S & G	15,123.76		558.28
Grazing Trespass	7,958.58		2,774.53
Special Use	2,540.69	447.92	
Occupancy Trespass	2.25		38.96
Water Power	5,466.02	6,317.82*	
Fire Trespass	89.61	25.05	

*On account of a large refund in July, 1918, the receipts from Water Power for that month showed a net minus balance of $851.80.

Forest Service Exhibits

C. A. Lindstrom, who returned from France but a few weeks ago after spending three months in that country in connection with the Government exhibits for the A.E.F., is now touring the U.S.A. in charge of Circuit I of the Departmental Exhibits.

The Forest Service contributed the following material to the exhibits for this circuit:

Windbreak Model - - - - - - This model tells two stories. One-half shows a farm adequately protected by windbreaks, and as a result good crops, a good orchard, and a well protected house with every evidence of prosperity. The other half shows a sad picture. Through lack of protection, crops are poor, the orchard broken down, and the home in dilapidated condition with every indication of hard times.

Post-Treating Plant Model - This exhibit indicates how a farmer can, on his own farm, treat fence posts with preservatives to lengthen their life.

Timber Sale Model - - - - - No. 1 shows a National Forest timber area in all its primeval glory.
No. 2 shows the same area after logging operations in accord with Forest Service policy and management, every mature tree removed, no unnecessary damage or reckless waste, and everything done to safeguard a future supply of timber from the same area.
No. 3 shows the area when logging is done in a careless and reckless manner. Trees too small for the present cutting are damaged so that they have no chance for further development, stumps are cut high, merchantable logs left in the woods, and the land completely ruined.

Grazing Model - - - - - - - This depicts the regulated use of forage resources on the range and indicates how the Forest Service makes range improvements to get the full value from this resource.

Forest Service Exhibits (Cont.)

Box-Testing Model - A contrivance operated at the Forest Products Laboratory. It is a large drum, with projections or cleats of various kinds on the inside. The drum is revolved and the box or package placed inside for the test is shunted along and as it hits the various projections or cleats it undergoes the same hazards that a package meets in the usual trip from shipper to consumer.

Panels - - - - - -
1. Trees suitable for use in planting windbreaks.
2. Simple fence-post treatment for the farmer.
3. The damage done by forest fires.
4. Protective methods of the Forest Service to prevent forest fires.

The above exhibits will be shown at the following fairs, and as this circuit strikes several of the western National Forest states it may be worth while for Forest officers to bear their dates in mind. We hope that there will be opportunity for many of the field officers to see these exhibits. Mr. Lindstrom will be very glad to have a chance to greet them.

Itinerary of Circuit 1

Missouri State Fair	Sedalia, Mo.	August 9-16
Iowa State Fair	Des Moines, Iowa	August 22-29
Montana State Fair	Helena, Mont.	September 8-13
Washington State Fair	Yakima, Wash.	September 15-20
Oregon State Fair	Salem, Oregon	September 22-27
Utah State Fair	Salt Lake City, Utah	October 6-11
Arizona State Fair	Phoenix, Arizona	November 3-8
Arkansas State Fair	Little Rock, Arkansas	November 16-22

Our Reputation

Shortage of funds due to delay in the appropriation bill has apparently very seriously affected the financial standing of the Forest Service. This fact was brought home to us last week in connection with some official purchases of excess supplies, when the sales officer calmly informed us that he was ready to send the articles purchased and that a certified check was required. It was a new one on us to be informed, particularly by a Government officer, that payment by the good old regular line Government check would not go and to be asked for a certified check.

Forest Officers Must Pay Notary Fees

Forest officers executing oaths of office as Deputy State Game Wardens are required to pay the notary fees from personal funds, according to a recent ruling of the Comptroller to whom this question was submitted. The Comptroller rules thus because he considers the State to be the chief beneficiary and not the Federal Government, although the acceptance of these additional duties is more or less obligatory under the Act of May 23, 1908. An effort was made to have the expense of necessary notary fees paid from Federal funds.

Embossing Machine

A metal embossing machine is now part of the equipment of the Forest Service and the facilities at hand will make it possible to furnish on short notice the various kinds of tags needed in the field in connection with sample plots and other investigative work. The machine furnishes one line aluminum tags one-half inch wide with letters one-quarter inch high. Each tag is perforated at both ends by small holes which can be readily enlarged if necessary on account of the size of the nail or wire used for fastening.

Forest Service Uniforms

The high cost of living has struck the manufacturers of material for Forest Service uniforms. Several of the firms that furnished bids in the past failed to submit any at this time owing to the uncertainty of the situation in the woolen mills.

The bid received was so high as to make the price for the two-piece uniform, either of whipcord or serge, prohibitive, and the committee took the obvious action of rejecting the bid. It seems best to postpone the purchase of uniforms until later, in the hope that conditions will improve. No bid or comment was received on furnishing the work uniform.

A Canadian Comment on Private Forestry

Recent publication of the argument for and against compulsory forestry on private lands, between H. S. Graves, chief forester of the United States, and R. S. Kellogg, secretary of the Newsprint Service Bureau, has drawn special comment from the Canadian Forestry Association, which in a bulletin says:

"Mr. Kellogg's criticism is not unlike what is commonly heard in Canada in respect to any State interference with old-established logging methods that in certain places and in certain particulars may be the antithesis of conservation. In Canada, however, one finds progressive lumbermen and paper manufacturers openly critical of such ill-working blanket regulations as are involved in the diameter limit and not at all unwilling to adopt improved methods if only they are made mandatory and at least province wide. Local forestry, patchy conservation, has taken no hold whatever in Canada, nor can it get far anywhere.

Many Canadians have said, after Mr. Kellogg's manner, 'Forestry must pay. Forestry must be economically sound to succeed.' This is open to a dozen interpretations. Is a cutting system that makes a tidy fortune for a jobber and yet so exhausts a timber tract as to close down an industrial town, economically sound? It is sound, indeed, within the limited sense of the jobber's economy. It is quite unsound and politically crazy as a community enterprise. Whose economic soundness is to receive first consideration? Apparently the head of the U. S. Forest Service makes the security of the State his starting point. No doubt Mr. Kellogg also would subscribe to that. The rest is a matter of method. Mr.Graves inclines towards legislative compulsion, believing that twenty years of educational method have not affected conditions on private-owned lands and that while logging systems may be uncomfortably regulated, the changed order will be uniform and therefore acceptable."

Washington Notes

Major Swift Berry has returned from France, but will not return to the Forest Service. Major Berry goes to the Income Tax Division of the Treasury Department. He says that his decision is not because he loves us any the less, but because the incidental accompaniment in salary in his new job draws him away. The attraction is but a couple of thousand over his Forest Service job.

Forest Products Laboratory Notes

The big circular saw is humming once more after its long vacation. The first day's work consisted in cutting up five of the ash logs recently secured in the East by Mr. White. The 62 pieces of ash will be cut into $2\frac{1}{2}$ inch stock and then kiln dried. When seasoned the section of timber mechanics will use it to study the effect of spiral grain on strength.

These tests are similar to the tests made last year on Douglas fir and Sitka spruce. Mr. Luxford is in charge of this work and has a considerable tale of woe because of the frequent changes in the personnel of expert assistants, He feels that he is running a training school, for he has trained three separate groups for this work.

The tests will extend over a period of about six months.

Forest Products Laboratory Notes (Cont.)

Visitors are coming to the Laboratory in good numbers. During the month of June 71 visitors were escorted through the Laboratory under the regular guide system, not to mention those taken care of in other ways. In July 115 names were registered in the visitors' book, which is probably not a complete list.

A carload of oak logs of various varieties picked up by Mr. Connor in North Carolina has reached the Laboratory. The last car of cypress also arrived about the same time. The oak was donated for experiments in the kiln drying of vehicle stock. The yard now has much the same appearance as during the war rush.

A large amount of oak chair stock is rejected at commercial plants because of large surface checks which open up in the hot plate benders. A steaming and drying treatment after the bending process was tried by the Laboratory to see if it would close such checks and make the pieces fit for use. Surface checks forming in lumber during drying may be closed successfully by careful manipulation of the drying conditions in the kiln, and it was thought that the surface checks in bent chair stock might also be closed. However, the experiment showed fairly conclusively that the moisture content of chair stock is reduced so low previous to bending and drying in the hot plate benders that there is little possibility of removing the evidence of such damage.

District 1 - Northern District

A tabulation of the Supervisors' ten-day fire reports for the period ending July 31 shows that 1093 fires have been reported for the District during the calendar year to date, of which 280 fires occurred during the last ten-day period of July, as against 348 fires during the period from July 11 to 20. The number of fires reported this season is in excess of the number reported at the end of July for any previous season, but there is a decline in the number of fires reported at the end of the month. The reports show that there were nearly 4,000 fire fighters on the job at the end of July.

The Addie-Copeland road upon the Pend Oreille Forest has been completed. The work consisted of $3\frac{1}{2}$ miles of new construction and $2\frac{1}{2}$ miles of improvement. Ten thousand dollars was expended from the 10 per cent fund, and $1,000 cooperative money from Bonner County. Surveyor S. H. Ketcham had direct charge of the work.

At the present time the Bureau of Public Roads is constructing for the Forest Service the following road projects: Fourth of July Canyon, Yaak Valley, North Fork of the Flathead, West Gallatin, Belt Creek, Sheep Creek, East Fork of the Bitterroot, Kooskia-Lowell, and plans to have under construction in the near future the Metalline and Glacier Park projects. If the location surveys are completed in time, construction will be started upon the Greer-Bungalow and South Fork of the Clearwater roads.

The Forest Service has under construction on the West Branch, Addie-Copeland (just completed); North Fork, and Bitterroot-Big Hole reconstruction; Elk Horn, Mill Creek, and five projects upon the Sioux Forest.

A recent decision of the Attorney General of the State of Idaho rules that Forest officers who have not been residents of the State for six months are not entitled to a resident's game license, but should secure a nonresident's license for hunting or fishing. Idaho game officers have heretofore issued licenses to all Forest Service employees, irrespective of residence requirements. A resident of the State up to the time of the draft, however, who has since returned, is entitled to a resident's license.

The planting survey crew moved its headquarters on August 5 from Adair, Idaho, to Falcon, Idaho. The survey of the North Fork of the St. Joe is the work in hand, and the men composing the crew are W. I. White, in charge, W. E. Thorpe, and F. J. Foch.

District 3 - Southwestern District

The Arizona Forests are to be visited by the students taking the special five-weeks' course in range and livestock production offered by the University of Arizona. Four weeks of the time will be spent out on the range and it is the plan to have the students get familiar with management of grazing on the Forests.

District 3 - Southwestern District (Cont.)

Hugh O. Cassidy has returned from 18 months' service in France with the 20th Engineers and has been assigned to the Gila Forest as Forest Ranger.

The executive committee of the New Mexico Cattle and Horse Growers' Association passed resolutions endorsing the administration of the National Forests by the Department of Agriculture and opposing the transfer of the Forest Service to the Department of the Interior.

The total rainfall at the Fort Valley Experiment Station for July was 8.77 inches. This is somewhat in excess of the usual amount for the entire summe rainy period. Rainfall in amounts exceeding .01 inch was recorded on 19 days. The amounts recorded for July at the mountain stations were:

Douglas fir type - - - - - - - -	12.20 inches
Engelmann spruce type - - - -	11.00 "
Timber line - - - - - - - - - -	13.78 "

District 4 - Intermountain District

Supervisor DeMoisy, on his return to Ogden from a trip to the Bridger Forest, reports that 12,000 acres have been burned over and that 22,000,000 feet of timber have been burned. Supervisor Cooper, of the Bridger, has been engaged solely on fire fighting since the middle of June.

A new road district has been created by the Bureau of Public Roads, with headquarters at Ogden, on account of the large amount of road work in the Intermountain country. This new arrangement will no doubt assist materially in expediting the handling of road matters.

Ranger Judd, on the Kaibab, has been granted reimbursement of $150 for the loss of a horse which was being used on official business at the time of injury. The horse, which fell from the trail where a wash caused the bank to cave in, died almost immediately after the fall.

Arthur G. Nord, just back from 18 months in France with the 20th Engineers, will shortly resume his position as Forest Ranger on the Targhee Forest.

District 5 - California District

Men have been known to wait on the steps of the church early in the morning, but unique is the case of Domenico Vassio, Italian of McCloud, who met Judge Tracey at his office door at the hour of opening to pay a fine of $25 before he had been arrested or even a warrant sworn out for him.

Vassio, in company with two friends, was caught by Ranger Prefountain in the act of shooting quail near Mud Creek, on the Shasta Forest. Shots were heard by Prefountain from the road and an automobile mysteriously concealed in the brush was seen near by. Going back from the road a way, Prefountain came upon Vassio just as he brought down a quail, and halted him as he was about to take another pop shot. The two other men apparently "ditched" their arms and hid in the brush. Vassio's name, game, and auto license number were taken by the officer, who intended to have the man arrested in McCloud. All the trouble of arresting him was spared the officer when Vassio appeared at Judge Tracey's office with an interpreter the first thing in the morning and held forth his $25, while the interpreter explained what the money was for.

Harry Caldwell, Deputy Sheriff of Weed, and former candidate for Sheriff in that district, plead guilty to a charge of game-law violation and was fined $25 by Justice Allen in Dunsmuir, August 6, according to a report from the Shasta Forest. Vincent Cerny, a partner in the hunt, was found with deer and bear meat in his possession and was fined $50 by Justice Lawrence in Sisson, on July 19.

Tourist travel on the Mono Forest is heavier this year than ever before. Garages are doing big business and the hotel accommodations of the small communities of the region are taxed beyond all capacity.

Major Evan W. Kelley has returned from nearly two years' service in France with the 20th Engineers, and has shed his regimentals and got into harness in the District Office in Operation with special attention to road and trail matters.

District 5 - California District (Cont.)

Supervisor Jordan of the Inyo Forest reports that during the second week of July 2017 automobile loads of campers and recreation seekers have crossed the Convict Creek Bridge on the main road between Bishop and Mono Lake.

The existence of three elephants on the Mono Forest was recently reported to Supervisor Maule. The informant was slightly mixed in his big-game knowledge, but the excitement created by the report had some good results, for an immediate investigation was made and it was found that the strange animals were antelope. Not for years have any antelope been seen in the Mono, so a discovery of importance was made after all, even if the Supervisor missed out on the elephant hunt.

About 50,000 eastern brook trout were planted in the headwaters of the West Walker River on the Mono Forest by Ranger Atchison, with the assistance of the local stockmen.

The Shasta Forest, through Forest Examiner Weaver, submits the following preliminary report on planting operations of last spring:

1. Total area planted, 179 acres.
2. Total number of trees used, 117,000.
3. Average cost per acre, $18.85.
4. Average number of men employed, 22 men per day for 19 days.
5. Wages paid per day, $2.50 and board.
6. Weather and soil conditions: Weather dry and windy throughout the planting. Rained .28 of an inch on May 14. The soil was moist at beginning of season, but dried out rather rapidly. There has been no rain since. It is my opinion that we are expecting more than can be realized when we consider the fact that we dig up the trees from a site where they have been under favorable treatment, prune their roots to ten inches, transport them to the planting area and the put them in ground that is barely moist. With this shock they then stand in a dry soil for three or four months without a drop of water. The above process is a difficult one to surviye without taking into consideration the fact that a large amount of carelessness in planting nearly always takes place.
7. The chief lesson that stands out above all others is the unfortunate necessity of employing the drifting class of men that frequents Sisson and vicinity. No recommendations are submitted now, as it is deemed wiser to wait until an examination is made this fall of all the areas planted.

District 7 - Eastern District

Supervisor Heller, late of the Ozark, but more recently of the Arkansas, has resigned and will enter private business. The very recent transfer of Mr. Heller from the Ozark to the Arkansas, although accompanied by the conservative Governmental promotion in dollars, was insufficient to overcome the attractions of the salary of $5,000 he is to get in his new job. The salary is not the only attraction, for the work is also attractive and we feel that Mr. Heller is going to be in a position to do much good for forestry. He writes that his new employer is so concerned about the scarcity of the future timber supply that he is to buy up timberlands of oak, pine, cypress, and hickory to serve as a reserve supply. His first assignment is to examine several tracts and prepare a plan of regulation and management. This is of interest, because it shows that hardheaded business men consider a plan of management and regulation of prime importance long before they think of sticking an axe into a single tree. Mr. Heller was selected by this company because of confidence in his ability and because of his connection with an agency that has as its business the conserving of timber. We feel that Mr. Heller is in a fine position to further private forestry.

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WEEKLY BULLETIN

Forest Service - Washington Office

(Not for publication)

August 25, 1919.

The Tendency in Trespass Cases

Recently a series of graphs were made to show the trend in trespass cases. The timber trespass curve which showed the highest number of cases per annum in 1911 has now dropped to the lowest in number. Timber stealing was in the early days a popular outdoor sport, but unfortunately for its continuance it was of comparatively easy detection. It is difficult to hide a few thousand feet of logs in one's bedding or feed it to the stock. Besides the laws are specific in providing penalties and court decisions are numerous and discouraging to the would-be trespassers.

Grazing trespass on the other hand is somewhat difficult to prove if the trespasser is not caught in the act of trespass. Usually there are tracks of livestock everywhere on the trespass area, and the problem is to secure evidence to connect ownership of the stock with the clues found on the area of trespass. Court decisions had to be secured and the damages assessed were for a while so low that this form of trespassing was not unprofitable. To reduce this form of trespass, the policy is now to let "the punishment fit the crime" by reduction or cancellation of valuable grazing preferences for repeated offenses.

Few of the four hundred people reported as trespassers annually repeat the offense. When once taken to task they go their way and sin no more. However, there is a new crop of trespassers each year.

As the recreational use of the forests becomes greater the chances for fire and occupancy trespass increase and the condition is duly reflected in trespass cases reported. Increased activity on the part of forest officers accounts for quite a proportion of increases in all trespasses. The "arson squad" is doing good work. Fire trespasses vary from year to year as the fire hazard is greater or less.

Hunting and fishing trespass cases reported are not numerous as yet. However, as the recreational use of the forest increases, and with the enforcement of the new game trespass regulation, it is possible that this form of trespass may increase. The peak will be reached when there is a general understanding of the authority of Forest officers to arrest in this kind of cases.

It is reasonable to suppose in the future that there will be a decline in the number of trespasses committed. However, of the total number of trespass cases, a larger proportion will be found to be willful in character and that in the future prosecutions on a criminal basis will increase as compared with the present proportion of civil and criminal cases.

The Forest Service is charged with the protection of the National Forest which contain public resources of immense value. In most instances the trespasser is enriched by his act. Therefore settlement should be on a basis sufficiently severe to make it unprofitable. However, maximum penalties are now always the most effective. The primary purpose of action in trespass cases is to protect the forest from all kinds of trespass - not to "get even" with the trespasser. With this object in mind it should be easier for the officer in charge of a case to choose the proper course of action looking to the settlement of the case.

CLINTON G. SMITH.

A Thousand and One Blankets

Chief of Maintenance Shannon has just bought a thousand and one blankets for fire fighters on the request of District 1. The original order was for but one thousand blankets; the extra one was purchased because the price set by the War Department was $4.60 each for blankets in lots of a thousand or less, and $4.40 each in lots over a thousand. This extra blanket means the saving of $20 on the thousand blankets at the expense of $4.40.

Forest Fires Impede Navigation

Navigation on Lakes Superior and Huron is being interfered with by the smoke from forest fires, according to recent reports.

During the day the captains are able to make way with a fairly clear view, but almost every night they are forced to anchor their vessels. Between the fog and the smoke it is impossible at times for the crews to see 25 yards, and to continue sailing would mean accidents. Recently no vessel was locked through the Canadian Soo for twenty-four hours because of the smoke.

Ask for Commissary Privileges

Legislation opening the Army and Navy Supply Departments for purchases by civilian employees of the Government has been asked in a letter sent to the President. This measure is asked for as an immediate emergency measure, pending more fundamental economic adjustments for all workers. Should the time ever come when such commissary privileges are extended to civil employees a far step will have been taken to help out on the cost of living. It is a well known fact that employees in Washington holding commissions in the Army and Navy have their salary materially padded by reason of the commissary privileges which cover food, clothing, fuel, etc.

Additional Bonus Asked For

Under the spur of urgent necessity, Government employees in Washington who are members of the National Federation of Federal Employees, through their officers, have passed a resolution asking for an additional bonus of $360 retroactive to July 1.

Statistics applicable in Washington show that living expenses for July were 3 per cent higher than last December, which up to that time had been the highest on record.

In presenting the resolution it was pointed out that the employees were anxious for an immediate material reduction in the prices of food, shelter, and clothing, rather than a mere increase in pay, but until such a reduction was accomplished there was no alternative but to ask for increased compensation.

Management of Grand Canyon

On August 11, the management of the Grand Canyon was turned over to the National Park Service by the Forest Service, after having been under the control of the Forest Service for fourteen years.

The Canyon became a National Park by the Act of February 26, 1919, but the Park Service has not been in a position to assume the management until just recently.

The original withdrawal of the area took place in 1893 when the Grand Canyon Forest Reserve was created, which was one of the first reserves created under the provisions of the Act of March 3, 1891. Administration of the area did not actually begin until 1898, then under the Department of the Interior. With the creation of the Forest Service, in the Department of Agriculture, in 1905, the control of the Canyon came to the Forest Service. In 1908 the National Monument was created and as it was within the exterior boundaries of a National Forest the form of administration did not materially change.

Crook Forest Enlarged

By Presidential proclamation 29,440 acres have been added to the Crook Forest. The lands are located in the Winchester Mountains southeast of the Galiuro Division of the Crook.

Elimination from the Caribou

On August 21, the President signed a proclamation eliminating 12,560 acres from the Caribou Forest, Idaho. Of this area 5,100 acres are private lands and of the remainder about 3,000 acres are classified as chiefly valuable for agriculture.

Will We Get Pay for Overtime?

Provision to pay for overtime for employees of the Bureau of Animal Industry is made in the Act of July 24, which appropriates funds for the Department of Agriculture for the year ending June 30, 1920.

The authorization by law is that employees in establishments subject to the provisions of the Meat Inspection Act of June 20, 1906, be paid for overtime work. All work on Sundays, New Year's Day, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas, and on any other days declared holidays by Executive Order is to be paid for as overtime work.

The overtime pay of employees benefiting by the $240 bonus is to be calculated on the basis of the entire compensation. Overtime is to be calculated by the hour, taking one-eighth of the daily pay as the basis for the hourly rate.

For Sunday and holiday work the rate of pay is to be double the regular rate and for other periods of overwork one and one-half. No overpay will be paid for less than one-half hour.

This provision for overtime is very interesting and raises the query on our part, How about the Forest Supervisor and Forest Ranger? Long days, extending from early morning until late at night are the rule and particularly so during the fire season. All the extra hard work done by the field officers would be in a measure compensated should the Forest Service be considered under a similar overtime pay provision.

Washington Notes

Captain L. A. Whitsit, formerly Assistant Engineer in Charge of Water Power in the Washington Office, but more recently in the Power Section of the War Industries Board of the War Department, will not return to the Forest Service. Captain Whitsit is now with the Electric Bond and Share Company and expects to sail from San Francisco for Tokio via Siberia at an early date. He is to examine and report on power sites in which the company is interested and prepare plans for their development. Incidentally a goodly salary accompanies him on the trip.

S. T. Dana has been drafted for service with the reclassification committee. We pin our hopes on Mr. Dana to put Forest Service employees on the map in every respect that adds to efficiency in service to the Government and esprit de corps amongst ourselves.

A battery of three water-spray kilns has been constructed at the Washington Navy Yard and is ready for a preliminary run under the supervision of a representative from the Forest Products Laboratory. The kilns are each 26 feet in length and are to be used in the drying of pattern stock.

Forest Products Laboratory Notes

At the request of the Southern Furniture Mfg. Association, a representative of the Laboratory spent two weeks in North Carolina visiting typical furniture and chair plants to ascertain the characteristic difficulties encountered in kiln drying hardwoods in that region.

What appears to be a general and difficult situation in the Carolina region is that almost every plant is a large and somewhat unbalanced expansion of a very small plant. In the majority of cases there is a lack of dry kiln capacity with no available yard space for installing additional kilns. This means that the present kilns must be worked to maximum capacity, even at the expense of the quality of kiln dried lumber.

It is proposed to draw up a report on this trip that will be suitable for publication and distribution by the Southern Furniture Manufacturers' Association. The report will discuss the good points and weak points of kiln practice in this region, and give data of practical value to furniture manufacturers which the Laboratory has accumulated.

The fame of the Laboratory has gone abroad. Under date of August 11 a letter was received from the firm of Henri Dehousse & Company of Brussels, Belgium, asking for information in regard to the special package recently developed at the Laboratory for shipping high voltage porcelain insulators. They had read of this work of the Laboratory in the American Exporter. The letter was written in French, but the versatile Laboratory experts translated it with impunity.

Forest Products Laboratory Notes (Cont.)

D. R. Brewster gave an informal talk on "Kiln Drying in its Relation to the Selling of Hardwood Lumber" before the Northern Wholesale Hardwood Lumber Association in session at Minneapolis. Mr. Brewster also addressed the wood products group of the Manufacturers' Club of Minneapolis, setting forth the general activities of the Laboratory. In connection with the latter address he used the motion picture film showing the activities of the Laboratory.

A carload of pulp and paper machinery formerly the property of the Bureau of Plant Industry has been received. Owing to a curtailment of appropriation the Bureau of Plant Industry found itself no longer in a position to use the machinery, and so the Laboratory fell heir to it.

District 2 - Rocky Mountain District

The D. & R. G. Ry. has recently let contracts for the purchase of approximately 45,000 narrow gauge hewed railroad ties within the Gunnison Forest near Pitkin and within the Cochetopa in the vicinity of Sargents. Most of these ties will come from patented and Forest Service land on the Gunnison.

This is the first time in recent years that this railroad has purchased lodgepole pine railroad ties in this District. It is understood that if this species is found satisfactory, further contracts are to be let.

Assistant District Forester John H. Hatton has just returned from a seventeen days' trip on the White River National Forest where he found forage conditions, on the whole, in very good shape on the National Forest proper. Some of the outside ranges have been hit pretty hard by drouth and dry farm crops generally will be light. The hay situation throughout the valley surrounding the White River Forest will also be pretty acute this winter; in fact, it is anticipated that hay will be at least $20 per ton in the stacks. Livestock on the Forest has done exceptionally well, as is usually the case where the rainfall is lighter than usual, since it results in earlier maturing of the forage for fattening the stock.

Some of the lamb shipments have already been made from the White River. One shipment of six cars, early in August, averaged 69 pounds per head and brought about 16½¢ at market.

Vero Stabio, a resident in the Black Hills National Forest, will undoubtedly henceforth use greater care with fire. He was recently arraigned in the Justice Court in Deadwood charged with letting a fire escape through negligence and carelessness. Upon pleading guilty, he was given 30 days in jail on suspended sentence.

Receipts for July gave District 2 first place. This was due to timber sales, which, while exceeded by two Districts, were sufficient in conjunction with Grazing to win first place.

Report from the Washakie shows that the Wyoming Tie and Timber Company drive has recently reached Riverton. However, on account of light water and labor conditions, it was necessary for them to leave between 40,000 and 50,000 ties undriven.

The entire supply of bedding and mess equipment, pack saddles, emergency telephone wire and instruments held in reserve in Denver for fire fighting crews is now out on fires together with the additional supply of beds made up from the blankets secured from the War Department and the supply of seed drying sheets that were in storage here. Some of the materials have been sent to District 1 and the remainder is at fires on this District.

During the present season there has been a noticeably favorable comment in a number of the best papers of Colorado and Wyoming warning the people against carelessness with fire.

This is believed to be due to the campaign carried on for several years past by the posting of fire signs throughout the Forests. Our theory is that the public has become impressed with the need for care with fire and the editors' comment is a reflection of this public education. If this is true, it is an indirect benefit from the propaganda of the signs and other educational material that has been put out that is of the utmost value in educating the public to use care with fire.

Recreation Engineer Arthur H. Carhart has just returned from a trip through the Minnesota National Forest and reports a great deal of enthusiasm among the commercial bodies in that district over the development of the recreational opportunities on the National Forest and Forest Service direction.

Fishing and hunting licenses will be issued to employees of the Forest Service and Biological Survey in Colorado without charge. Word to this effect has just been received from the State Game and Fish Commissioner.

During the past week there has been a fire on the Bighorn, Shoshone, and Medicine Bow National Forests, all of them being in country where serious loss could occur in a short time. The Forest organizations got after these fires with speed and efficiency and succeeded in controlling all of them before great damage resulted.

On the Montezuma Forest in Colorado there are about 1,000 head of practically worthless range horses. Most of the animals are branded, but the owners disavow all interest in the horses or responsibility for them, and thereby furnish evidence of abandonment. It seems impossible to get the State Livestock Board, which has authority in case of stray stock, to take action toward their disposition. The only remedy left is to secure the names of the owners of the trespassing animals and begin action to restrain them from grazing on the Forest, and to ask for recovery of the value of the forage consumed.

District 3 - Southwestern District

The total area of true arctic type of plant and animal life existing in the State of New Mexico is to be found in the Sangre de Cristos Mountains, which are within the boundaries of the Carson and Santa Fe Forests. Recently J. S. Ligon, of the Biological Survey, returned from this region with specimens of arctic birds collected for data to add to his book on birds of New Mexico. He found the American pipit, and white-crowned sparrow, but failed to locate any of those most interesting birds of the high, cold regions - the ptarmigan. In addition to his bird specimens, Mr. Ligon brought back specimens of the marmot and coney, small fur-bearing rodents peculiar to the arctic regions.

At the recent meeting of the New Mexico Cattle and Horse Growers' Association at Magdalena, many resolutions were passed. Of particular interest to Forest officers are the following:

Increase in Salaries of Forest Officials

WHEREAS, it is absolutely essential to the stock industry on the National Forests and to the proper administration of the Forests themselves that capable and experienced men be employed in the Forest Service, and

WHEREAS, it is a well known fact that such men are almost impossible to obtain and if obtained do not remain long in the Service because of the low salaries paid, therefore be it

RESOLVED, by the New Mexico Cattle and Horse Growers' Association that Congress be urgently petitioned to increase the pay of Forest Service employees according to their efficiency and importance of these positions, to an amount sufficient to attract and hold men of the proper ability.

The Inter-Forest meeting of rangers on the Datil, Gila, and Apache Forests will be held at the Negrito Ranger Station on the Datil from September 22 to 30, inclusive.

Inquiries regarding the pinon crop are reaching the District Office. The annual output is from 50 to 150 carloads. A machine has been perfected which removes the hulls from the nuts without breaking them.

The sudden death of LeRoy E. Gardner, who recently resigned from the Forest Service, occurred last week, supposedly as a result of ptomaine poisoning contracted at a camp of one of the lumber companies operating in Arizona. Ranger Gardner entered the Forest Service in 1916 and was assigned to the Sitgreaves.

Alfred W. Voight, just back from twenty-two months overseas, is already on duty as Deputy Forest Supervisor on the Apache. Mr. Voight was timber sale ranger on the Coconino before the war.

Eleven of the hunters of the Biological Survey operating in New Mexico have accounted for 3 wolves, 3 lions, 2 bears, 90 coyotes, and 16 bobcats.

District 3 - Southwestern District (Cont.)

Supervisor Yarnall of the Tusayan has the distinction of being the only Forest officer in Arizona under bond for violation of the State statutes. This placing under bond is on the charge of violating the Civil Code of Arizona on account of closing the gaps in the A. T. & S. F. Railroad right of way fences between Ash Fork and Bellemont. The action was instituted by some of the Tusayan permittees who objected to the action taken by the Supervisor.

A plant of 20,000 trout has just been made on the Carson in a number of streams in the Sangre de Cristos. The fry were released at points from 30 to 40 miles from the railroad and an interesting fact in this connection is that but one dead fish was noted in the entire shipment up to the time the fish were put in the water.

District 4 - Intermountain District

To relieve the drought situation prevailing at present in Utah, Idaho, Wyoming, and Montana, the Department of Agriculture has established an emergency clearing house at Great Falls, Montana. This office will furnish information to western stock owners looking for feed and will also be in touch with the market.

A check for $125 has been forwarded to Washington as the contribution from this District to the fund for the War Memorial to be erected on the grounds of the Department of Agriculture in Washington.

District Forester Kneipp is out on a week's trip on the Teton Forest in connection with the elk question.

Supervisor McGowan and Forest Ranger Mott, of the Toiyabe Forest, recently arrested a man for killing deer out of season and without a license. The arrested hunter pleaded guilty and was fined $20 by a justice at Tonopah. The Tonopah paper apparently did not take kindly to the enforcement of the law and indicated much surprise that the official should make any effort in that direction.

District 5 - California District

It cost Hilario Laudajo, a camp tender for a sheep outfit, $100 for killing two does out of season on the Modoc Forest. The arrest was made by Forest Ranger Ben L. Johnson and Game Warden Courtright.

District 6 - North Pacific District

Professor Henry R. Francis, in charge of the Department of Forest Recreation, Syracuse University, is studying National Forest recreation by visiting the scenic features, camp grounds, summer home sites, etc., of the Forests of Oregon and Washington. At present he is on the Oregon, accompanied by two members of the District Office. Forest recreation is receiving new impetus through the establishment of this new department in Syracuse University, which is claimed to be the first of its kind established in any school or college in this country.

Not more than 4 per cent of the 1919 plantation of Douglas fir on the Soleduck burn, Olympic Forest, have died. Fifty per cent of the losses were due to the little mountain beaver. Of the 96 per cent still living, about half have been more or less injured by grouse-peckings. The trees are under the watchful care of the lookout man at the Kloshe Nanitch station.

Airplane patrol has been established over portions of the National Forests of the Cascade regions of Oregon. Trial patrols between Salem and Eugene and Salem and Portland have been successful. Lieutenant Ridenour, of the forest airplane patrol, after a flight from Salem yesterday, reported a large fire. Also earlier the same day several small fires burning near Eugene were reported as the result of another flight south from Salem.

Captain Fred E. Ames, 20th Company, 20th Engineers, formerly Chief of Silviculture in the District Office, will be detained in France by the A.E.F. for some time to come, according to a recent report.

The official receipt of the Salvation Army Home Service Fund, dated June 28, credits the Forest Service employees of Portland, exclusive of individual contributions, with a contribution of $43.75.

District 6 - North Pacific District (Continued)

Eighty-seven cities and towns of Oregon, Washington, and Alaska derive their water supply from the National Forests of the North Pacific District, according to a report just compiled in the District Forester's office.

Hikers on Eagle Creek Trail last week report that they saw a large black bear below the trail and were able to secure a photograph.

Telephone Engineer C. M. Allen has succeeded in communicating by wireless with Government Camp from the summit of Mount Hood. The first fire report via this wireless was received August 9 and gave information of a fire on the Warm Springs Indian Reservation. The transportation of the equipment to the summit of Mount Hood was a difficult problem. It is expected that in the near future there will be communication between the lookout on Mount Hood and the District Forester, Post Office Building, Portland, Oregon.

Samples of juniper wood have been received at the headquarters of the Deschutes National Forest and forwarded to J. Thornburn of Portland. The wood will be used by the British Government in making pencil slats. The juniper is of such fine quality that it is hard to distinguish from cedar.

Supervisor Hall and the Santiam Fish and Game Protective and Propagative Association, of which Mr. Hall is field secretary, have been doing some splendid work in the restocking of streams on the Santiam Forest and in stocking other bodies of water within reach of tourist travel.

On July 2 Supervisor Hall superintended the delivery and distribution of 76,000 Rainbow fingerlings, which were placed in the small tributaries of the Santiam above the Cascadia Ranger Station. On this same date other members of the association distributed 56,000 cut throat fingerlings in tributaries of the South Santiam River from Foster to Lebanon. Of the total of 132,000 fish planted from the car, Supervisor Hall estimated there was a loss of approximately 3,300 fish on account of the hot weather and the long distance they were hauled.

On July 18, 78,000 Rainbow and 10,000 Eastern Brook trout were received. 24,000 Rainbow were disposed of at Kingston, being planted in the South Santiam or tributaries in that vicinity; 12,000 were put in the North Santiam and some of its small tributaries, 3,000 were planted in Kinney Creek, 24,000 were released in the old mill pond at Hoover, which is adjacent to and opens into the North Santiam River. 15,000 were released in Bolder Creek, above Detroit. The 10,000 Eastern Brook are being distributed in the Pine Lakes and two lakes in Hunts Cove.

July 9, Nels Hanson, a rancher in the Trout Creek country, set fire to a slashing on his ranch, which adjoins the Colville National Forest. The fire spread over his ranch and attracted the attention of Forest Ranger Elliott, who was then fighting a fire on Storm King Mountain. Mr. Elliott took part of his crew and went to Hanson's at 3 p. m. and after hard fighting until 7 a.m. of the 10th put out the fire just as it reached the Forest. Mr. Elliott immediately arrested Hanson and brought him to Republic. At a hearing before the Justice Court Hanson was fined $50 and costs. In addition the State will require him to pay the actual cost to the Government in suppressing the fire.

Forest Supervisor Brown and Ranger LaSater were successful July 14 in securing the conviction of Maurice Kane, a sheep owner, for not extinguishing a camp fire.

Ranger LaSater's report in the case follows:

"About 9 a.m., July 14, a smoke was observed from Billings R. S. in the vicinity of Oatman Flat. Supervisor Brown and I started to the scene. We made good time, reaching the place in about 35 minutes (11 miles). We found that the fire had been started from ashes emptied from a camp stove in Yellow Pine needles.

We made a trench around the area, and found a wagon track leading away from the scene, with one horse being led. Knowing a band of sheep had just passed over the road (it is a stock driveway), we surmised that the fire was left by sheepmen. We took up the trail and followed it for some six miles, where we found the wagon, team and saddle horse. Three men were establishing camp.

Upon being questioned they admitted having camped the day previously at point where fire originated. We informed them of the law in regard to carelessly allowing a fire to escape and one of them accepted the responsibility, as he was part owner of the sheep. The sheep belonged to Sullivan & Kane. Maurice Kane was in charge of the band.

We took him back to Silver Lake City and arraigned him before the Justice of the Peace, J. S. Martin. He plead guilty to having allowed a forest fire to start from his camp. A fine of $10 was assessed and paid.

From the time of the discovery of the fire to time he paid fine was about five hours. Kane did not appear to feel resentful towards the Forest Service, and expressed his appreciation of the courtesy shown him."

Douglas C. Ingram, formerly grazing examiner on the Ochoco, has been assigned to the District office at Portland, and will be in charge of special grazing investigations dealing with grazing and brush burning in relation to forage production.

Forest Clerk L. C. Pratt, of the Chugach, has sent to the District Office a photograph of the large Alaska brown bear killed on Hinchinbrook Island, Chugach National Forest, in the spring of 1900, by Dr. W. H. Chase of Cordova. In the picture the skin is stretched out on the drying frame and is so large that the tall man standing in front of it and holding a yardstick in his upward extended arm cannot quite reach the full length of the hide. Mr. Pratt included the following information with the photograph: "The Alaska brown bear (also called the Kodiak bear) is the second largest species of bear known. Unlike his smaller cousins of the states, he has not yet learned respect for the white man's gun. While he is willing usually to attend strictly to his own business, he is not entirely averse to taking a hand in yours. He does not concede the right of way to anything that walks; is a superb rough-and-tumble, catch-as-catch-can mixer; loves a good fight for a fight's sake, and all in all is a good beast to let alone. Experienced Alaskans have a deep-rooted respect for Brownie and give him a wide berth except when they are specially cocked and primed to meet him. The species is very common throughout the entire coastal region of Alaska and is to be found many places far inland. His diet consists very largely of salmon, which he becomes wonderfully proficient in catching.

Forty acres of fire-killed timber on the Rainier Forest, estimated at 1,345,000 feet, were sold for $1.37 per M feet for the Douglas fir, $1.50 per M feet for the western red cedar, and $.40 per M feet for the western hemlock, which prices are slightly higher than the prices in the advertisement. The fire occurred in September, 1918.

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WEEKLY BULLETIN

Forest Service - Washington Office

(Not for publication)

September 2, 1919.

Commissary Supplies for Fire Fighters

At the request of the Secretary of Agriculture, quartermasters at all army posts in the West have been directed by the Secretary of War to open their stores to the Forest Service for the purchase in bulk of commissary supplies needed for the fire fighters. Great difficulty has been experienced by the Forest officers in getting adequate supplies from other local sources on account of the large amount needed and the extended period of the fire season. At present over 5,000 men are engaged in fighting fires and it has been found difficult to get subsistence supplies, blankets, and work clothes for the crew groups of about 100 men that are everywhere at work. Payment for these supplies will be made by treasury transfer of funds.

The above authorization is the result of a request for help from District Five received a week ago. In this connection it may be of interest to Forest officers in the field to know that a request for the extension of commissary privileges to Forest officers in remote regions, but near to an army post, was made some time ago and approved by the War Department. There is, therefore, relief in sight for Forest officers who now have to go 50 or 75 miles to a store for supplies when an army post is close at hand.

Why Lumber Measures Scant

It has always been an interesting phenomenon to purchasers of lumber to order one inch lumber and get material measuring 7/8 of an inch, or two inch planks and get planks measuring one and five-eighths inches. Getting lumber measuring less than the specifications has even caused complications in Government contracts where the inspectors for the Government refused to accept the material delivered because it measured seven-eighths and one and five-eighths inches instead of plump one and two-inch as called for by the specifications. The operators delivering the material filled the order in accordance with existing commercial practice, which allows the scant measure, whereas the inspector, in ignorance of this commercial practice, was a stickler for the full one or two-inch measure apparently specified in the contract.

In a recent issue of a lumber trade journal explanation is given by an eighty-eight year old correspondent as to how, when, where, and why the custom of scant thickness in lumber originated. It appears that up to 1870 all lumber was worked by carpenters educated to the trade, and the rules of inspection in existence at that time required that all lumber should be cut an eighth of an inch "plump" to allow for drying and shrinkage. Inspectors at that time were instructed to cut the grade of one-inch lumber if it did not measure "plump", this same rule applying to all thicknesses, as all material, even scantling and timber, was expected to dress to the implied size. About 1847 the rip saw and surfacer were introduced to save labor and to insure quality in dressing. Little improvement in dressing was noted, however, until about 1870 when, through the influence of lumber journals, the feasibility of dressing lumber by machinery in all mills was set before the public.

According to the correspondent, at that time the carpenters' trade had almost wholly given way to wood butchers who could drive a nail but could not fit a joint; so with lumber ready for nailing the careful joint or tenon became superfluous.

At the same time another element entered into the lumber business, namely, the custom of shipping the lumber by rail, and the payment of freight charges on the weight basis. Under this weight system of charges lumber was no longer cut full size, but the opposite system of cutting scant was introduced, until in many instances a product was but 7/8 or even 3/4 of an inch in thickness. The lumber is now handed to the customer at a freight saving by this scant cutting.

Dressing lumber on two sides further reduces the thickness of the board so that nominal one-inch boards when planed on two sides measure but 3/4 of an inch.

Railroad Strike in California

The railroad strike in California was shortlived, but during its brief existence was sufficiently serious to complicate matters for the Forest officers in the State in connection with the fire suppression work. Absence of railroad transportation forced the District Forester to get hold of automobiles and trucks to transport men, equipment, and supplies to the fire lines.

The fire situation has become acute during the past week, and, on account of the general drouth condition, indications are that there is a serious time in store for the Forest officers fighting fires.

A Correction

In the issue of August 25 an error occurred in the signed article on Trespass Cases, and we hasten to make amends. Although the author called our attention to the error, he assured us that he would not cancel his subscription nor withdraw his advertising patronage. We need both to keep going.

We should have said in the last paragraph of the article: "However, maximum penalties are not always the most effective." We said now.

Will Require Camp Fire Permits

For the present serious fire emergency in the West, the Secretary of Agriculture has extended the regulation which requires campers to obtain in advance from Forest officers permits to build camp fires in the National Forests in California, Oregon, Washington, Idaho, Montana, and Wyoming.

Under this emergency regulation, which will be in effect for the period from September 1 to September 30, 1919, the Forest Supervisors are authorized to designate from time to time, as conditions warrant, the localities of special hazard in which special camp fire permits will be required. Failure of campers to obtain such permits to build camp fires will make them liable to the penalties of the law for the violation of the regulations governing the administration of the National Forests.

The general extension of this regulation, which has been in force on several Forests in southern California, becomes necessary on account of the great fire hazard and the carelessness of campers. During the present season campers in Idaho and Montana have been responsible for about 200 fires from unextinguished camp fires.

Elk in the Southwest

Bringing a herd of elk into a ranching or farming country is like getting a bear by the tail and not knowing how to let loose. So says the "Pine Cone," the official bulletin of the New Mexico Game Protective Association.

It is not generally known that the Southwest boasts of an elk herd on the Coconino Plateau estimated to number from 200 to 400 head; that there is another, much smaller, herd in the Graham Mountains near Globe; and that the State of New Mexico also has a small herd near the head of the Pecos River. There are several smaller herds in private pastures in northern New Mexico.

The Pine Cone believes that the day of the elk as a free-ranging game animal is forever gone, and that the species should in general be confined to the National Parks. The elk have a pestiferous habit of running in large bands, of demolishing all ordinary fences, and of exhibiting an astounding preference for cultivated crops over any known wild forage.

Wherever elk are introduced into a farming community, there is a howl of protest, a wail of complaint, damage claims against the State, and the damnation of elk enthusiasts in particular, and game enthusiasts in general.

In view of this the Pine Cone suggests the following program:

1. Stop the further introduction of elk absolutely until we can determine the effects of the present plants.
2. Establish an elk refuge on the west end of the Sitgreaves National Forest for the protection of the magnificent herd now so well at home there. It is doubtful whether in all the Southwest there is a region so well adapted to this end, either in climate, topography, winter and summer range, or isolation from human cultivation, as that portion of the Sitgreaves Forest west of Chevalon Canyon. Let a small national game refuge be established at this place, with provision for adequate protection, and provision also for a permit system for killing off the surplus elk outside the refuge.
3. Make a thorough study of the other, smaller herds to determine whether they should be held to their present numbers, should be allowed to increase, or should possibly be exterminated if they are doing excessive damage.

The Summer Schedule of Articles

The Forest Service pencil has not been particularly active during the months of July and August, and the following is the list of articles prepared for publication:

Willow Culture	C. R. Tillotson	Successful Farming
Built-Up Construction for Airplane Wing Beams	H. D. Frary	By National Advisory Committee for Aeronautics
The Efficiency of Aluminum Leaf Covering on Airplane Propellers	A. C. Knauss	Trade Journals
The Influence of the Method of Manufacture on the Use of Casein in Glue Making	S. Butterman	Journal of Industrial and Engineering Chemistry
Manning an Industrial Research Laboratory for Intensive War Work	E. P. Ancona	Technical Journals
Determination of the Middle Diameter of a Standing Tree (Translation)	S. T. Dana	Journal of Forestry
Bringing Together the Wood-Using Factory and the Research Laboratory	O. M. Butler	Industrial journals
The Discoloration of Pulp Produced During Drying at Varying Temperatures	C. L. Bachelder	"Paper" and other technical journals
Pulpwood Consumption and Wood Pulp Production in 1918	Office of Industrial Investigations	News Print Service Bureau
The Forest Products Laboratory	Rolf Thelen	The Milwaukee Journal
Suggestions for the Use of Laminated Construction	A. L. Heim	Technical Journal
The Work Ahead -- For the American Forester	W. W. Ashe	Journal of Forestry
The Coloring of Paper	Otto Kress	Pulp and Paper Magazine of Canada

Pecky Cypress for Henhouses

An inquiry was received in the Washington Office a few days ago as to the suitability of Pecky Cypress for henhouses. The correspondent acknowledged himself to be unacquainted with the lumber but was persuaded by the name to think it might be of value for his purposes, particularly as the original henhouses built from North Carolina pine had decayed after nine years' use.

How to put out Forest Fires

Numerous offers of assistance in overcoming the serious forest fires now raging in the West have been received by the Forest Service. The schemes are as numerous as the letters received. The most recent communication came from Canada, and the correspondent makes his suggestions in the following essay which was transmitted with his letter:

Fire Fighting by "Aircraft and Pneumatic Guns."

"The heading of this article seems chimerical, I admit, and yet if I may venture to make a forecast I believe that in a very few years this method will supersede the one now employed and will eventually be the means of minimizing the appalling losses suffered each year not only by this Country but also the United States, in the periodical forest fires that occur so frequently during the summer season.

I do not say that the ideas now put forward are sufficiently advanced to admit of their immediate execution, but I hope thay may contain suggestions which in the hands of capable men will enable a practical scheme to be evolved dealing satisfactorily with this peril. I think it will be generally admitted that the present method of extinguishing large fires is capable of improvement if we know in which direction to look for assistance, now my idea is to employ aircraft for this purpose, a tentative scheme is already under consideration for employing them in postal and other duties in Canada and I think their use could be extended for the important work of aiding in extinguishing forest fires as well.

It is an acknowledged fact that during the late war our scientific knowledge of various "gases" was largely increased while aircraft has also been multiplied beyond probable peace requirements, now it seems to me that the machines made to drop bombs in the enemy trenches could be equally successful in dropping bombs of a different nature to aid in extinquishing or controlling forest fires.

From a theoretical point of view there is no difficulty in this matter at all beyond that of organization, suitable acids for this purpose are known to chemists and suitable bombs could be easily and cheaply manufactured.

The scheme of course is a big one, the initial expense would be great, and the method suggested appears revolutional; but I am convinced that if experiments prove that it is capable of practical utility, it would not only be a paying investment to the nation adopting it but an important step forward in political economy as well.

Pneumatic guns and mortars might also be used for the protection of those settlements closely surrounded by forest areas, as a line of bombs dropped in the path of an approaching fire should make further combustion in their immediate neighborhood impossible. There are of course various details which I have not approached in this little essay and which really do not come into prominence until its practicability is assured, I may, however, be allowed to say that the suggestions now made were gradually evolved by the horrors perpetrated during the war forcing the conclusions on my mind that it must be possible to adapt these terrible engines of death to more peaceful purposes."

Supervisor Swift is Caught

The recent challenge hurled by Supervisor Swift on the question of longevity in service brings forth the statement of Supervisor Campbell that on the Minidoka Forest four officers average 11 years, 10½ months of employment in the Forest Service. For the whole Forest the average length of service is eight years and nine months.

Private Forestry in Repartee

The present movement for a program of national forestry is creating considerable interest among foresters, timberland owners, and lumber trade journals. Recently in an address, one of the spokesmen for the timberland operators had the following to say: "As it takes 85 years to mature trees and the forest is to be perpetuated, for each 1,000 feet of annual production the manufacturer must have 85,000 feet of timber."

Considerable umbrage is taken at this statement by the professor of one of the western forestry schools, who, in a communication to the editor of a lumber trade journal has the following to say: "Mr. ----- can hardly plead ignorance of the principles of forest management so this statement must be accepted at its face value. Juggling of figures by a life insurance agent often blinds a struggling prospect just as Mr. -----'s statements will be accepted with a loud hurrah by lumbermen who imagine they are opposed to the practice of forestry. Let us analyze these statements for a moment. Suppose for instance that a baker sold 1,000 loaves of bread a day to casual customers. Would he have to carry a stock of 4,000 loaves of bread to meet the demand? Would he have to have an oven with a capacity of 4,000 loaves or could he bake his loaves in batches? Again let us suppose that a lumber mill owned by Mr. ----- has a capacity of 100,000 feet a day and that it operates 250 days each year. Would it be necessary for anyone but Mr. ----- to have an excess of 25,000,000 feet of logs constantly in the mill pond to keep the old pot boiling? China was once a well-forested country. Its bleak and barren hills are now largely inhabited by the descendents of lumbermen who refused to provide for future growth because Confucius stood up in a lumber meeting and declared such proposition to be impractical and visionary."

Washington Notes

Col. Graves is now in the East and for the present is in the White Mountains at Bethelehem, N. H., where he will speak on September 3 at the conference called by the Society for the Protection of New Hampshire Forests. Col. Graves expects to return to Washington after the conference.

Assistant Forester W. L. Hall stopped over in Washington for a day enroute to the conference in the White Mountains. Mr. Hall has put in some busy months in the middle west in connection with the program of private forestry, and expects to continue this work before returning to Washington at the end of the present month.

Roy Headley is back in Washington after an extended stay in District 1 where he had active participation in fighting fires.

Forest Products Laboratory Notes

Persimmons and Spelling: The following interesting letter was recently received at the Forest Products Laboratory:

"My Dear Sir Your Name Was Handed Me By The Hardwood Record & I Am Follering Their Advice I Want To Put Before The Manufactures Of The States Purcimon As The Most Durible Wood None For To Take The Place Of Walnut Or Any Other Wood None For Any Think Where It Requires A First Class Wood To Make The Finest Products For Inst Purcimon Are As Hard As Brass When Finished & As Slick As Glass & Its Tincel Strength Are Superior To Teak For Duribility & Survic & Has The Advantige In Weight Over Walnut By Two Pounds To The Ft In Board Measure & I Claim For Purcimon That For Gun Sticks & Shutles & Shices & Miter Gear Teath & Resaw Tables & Meny Other Thins Which Requires Hard Survis I Claim For Purcimon That There is Nothing In the Shape Of Wood That Grows In This Great U. S. That Has The Duribility Of Purcimon & I Want To Send You Samples Of The Purcimon We Have In Arkansa For You To Put It Thru A Thur Test & If Found To Be As I Claim For It To Make A Report If Same & Eather Place It With The Hard Wood Record Or My Self For Publication As I Have An Un, None Quantity Of This Timber & As I Want To Place It Before the Manufactures Of The U. S. I Take This Methurd Of Making A Furm Foundation For This Kind Of Wood Now I Will Ask You To Let Me Know What Size Peases You Will Require For Samples To Make This Test & I Will Gladly Send It To You By Return & Thanking You In Advance For Your Reply I Beg To Remain Yours As -------------------
Ark. City Ark."

Forest Products Laboratory Notes (Cont.)

A series of 12,000 tests to determine the strength of screw fastenings in plywood has been completed. The summarized data soon to be available will furnish the first comprehensive information as to the screw-holding power of various species of wood, and also indicate the proper spacing and margins and the comparative holding power of screws of various types of heads.

Assistant Forester Wm. L. Hall spent a few days at the Laboratory last week.

Heat apparently has no appreciable effect on either strength or water resistance of the casein glue, as was demonstrated by the examination of panels recently tested in a hot press.

District 1 - Northern District

Mrs. Lewis M. Anderson, clerk on the Blackfeet Forest, resigns from the Forest Service after nearly four years of service. Mrs. Anderson did very effective work on the Blackfeet Forest and had her hands more than full with the heavy work there during the war period.

Miss Vina Saddler of the Office of Grazing in the Missoula office has gone to Orofino on a thirty-day detail to help out in view of the large amount of clerical work brought about through the fire emergency.

District 2 - Rocky Mountain District

The possibility of using airplanes for fire patrol in the Rocky Mountains was demonstrated recently by the flight of four planes from Glenwood Springs, Colorado, to Denver directly over the Continental Divide. There was no difficulty in making the trip; but considerable excitement and alarm were occasioned among the people of this region at the appearance of the planes, as many of them had never seen an airplane before and were in some cases unable to account for the loud noise of the engines. The airplanes flew directly over Berthoud Pass at an elevation of about 13,000 feet.

Several Wyoming permittees owning about 4,000 cattle have taken advantage of the range offered in southwestern Kansas. The permittees have expressed themselves as very well satisfied and have indicated their indebtedness to the Forest Service for assistance in getting the information to them. This action is the direct result of the publicity given out by the Denver office of range available for drouth-stricken cattle.

The Board of Control of the Colorado Livestock Association, which was recently extended recognition by the District Forester holds monthly meetings in Denver. At its last meeting the Board recommended that a municipal meat market be established in Denver, believing this would tend to cut down the high prices now paid the retailers for meats. It also appointed a special committee to confer with railroad officials to ask for a special rate on feeds, particularly oil cake, which will be needed in certain sections of the State where pastures or hay will not be available. The general feeling was that stockmen should not be in haste to place orders for oil cake and other feedstuffs until later, as there appears to be a tendency just now to boost prices beyond all reason. Hay is quoted at $20 in the stack and oil cakes are now quoted at about $90 per ton for Colorado delivery. Unless those sections of the State which have been visited by drouth can get special rates or concessions for the transportation of concentrated feeds, it is felt that there must necessarily be a heavy sacrifice of stock which should be kept over.

Assistant District Forester John H. Hatton indicated to the Advisory Board the possible ways of cooperation. The Association has asked the privilege of publishing this statement and distributing it broadcast over the entire State.

Colonel Graves, during his recent visit to the District, spent two days in the Mt. Evans region, going over the area that has been proposed as a National Park to be carved out of the Pike Forest. He was accompanied by a representative of the city, one of the members of the Mountain Parks Advisory Committee appointed by the Mayor, and a number of Forest officers.

District 2 - Rocky Mountain District (Cont.)

As a result of the trip Col. Graves informed the Committee, appointed for the purpose of seeking legislation to establish this park, that he could not give his approval to the creation of the park as proposed. On Friday he addressed the Civic and Commercial Association at a luncheon and told them of his conclusion. The same evening Col. Graves had a conference with representatives of the City administration and discussed, informally, his plans for further development of the area. From statements made by those in attendance it appears that the city, while disappointed in his conclusion not to support the movement for a park, is reasonably well satisfied with the plan of development as outlined and is pleased with the assurances that Col. Graves gave of the plans to improve the area for recreation as fast as funds will permit. The City representatives are now particularly interested in getting, as soon as possible, an automobile highway built to the summit of Mt. Evans, altitude 14,260 ft.

Several of the Committee expressed a willingness to assist Col. Graves in bringing about the establishment of a national recreational policy as outlined by him at the informal conference with the city representatives.

It now seems as if there will be at least a temporary lull in the agitation for the establishment of a park, which has been going on for years, and has at times been very annoying.

District 3 - Southwestern District

W. W. Eggleston, of the Bureau of Plant Industry, has joined the peripatetic squad of students from the University of Arizona engaged in studying grazing conditions on several of the Arizona Forests. Later Mr. Eggleston will continue his poisonous plant investigations on the Gila and Datil Forests, and expects to be present at the joint ranger meeting to be held at the Negrito Ranger Station.

The planting of Douglas Fir and Engelmann Spruce on the Santa Fe Forest seems to have been a success. On August 15, three months after planting, practically all of the trees were alive and thrifty. The method of handling this planting was, as far as is known, original in that the seedlings had been held in cold storage for about a month awaiting the clearing of the ground of all snow. The plants were stored in the snowbank at the edge of the area to be planted.

The Coronado adds the following to the data recently published as to the length of service of forest officers on various Forests:

Ranger R. A. Rodgers, January 24, 1906	- 13 years,	6 months,	22 days
Ranger C. B. Scholefield, July 1, 1908	- 11 years,	1 month,	15 days
Ranger Neil Erickson, July 8, 1903	- 16 years,	1 month,	8 days
Clerk Loraine McMillen, June 1, 1913	- 6 years,	2 months,	15 days.

This makes a total of 47 years of continuous service on the same Forest, thus beating the record on the Crook Forest by one year and two months.

Theron R. Littlefield, formerly Forest Ranger on the Tonto, will not return to the Forest Service. He has accepted a position as engineer to a cement contractor in Ogden, Utah. Mr. Littlefield's regrets at leaving the Forest Service are sweetened by a $3,000 salary in his new position.

District 4 - Intermountain District

Miss Erma Williams of the District office has gone to McCall, Idaho, on an extended detail to assist in the handling of the heavy volume of clerical work which has arisen on the Idaho Forest because of the especially severe fire conditions.

District 6 - North Pacific District

A consolidation of the timber cruising crews on the Ochoco and Deschutes projects has become necessary on account of the difficulty of getting competent men brought about by the demand west of the mountains for timber cruising work. At the time the work was abandoned on the Deschutes, 36,000 acres had been cruised. Upon the completion of the Ochoco project the combined crew will return to the Deschutes Forest.

Stewart Edward White, apparently gathering material for more stories, recently visited the lakes on the Deschutes Forest in company with Forest Supervisor Norman G. Jacobson. Mr. White advocates a plan of lake rotation for fishermen. This plan follows the principle of rotation in grazing. Mr. White suggests that but one of the four lakes on the Forest be opened to fishermen during any one season, thus giving another lake to take its place the next season, and so on. By this rotation each body of water will be given a three-year rest from fishing. Mr. White has also suggested the planting of golden trout of the Sierras in these lakes.

Furrows a mile apart have been plowed through the country considered in special danger from fire as an important feature of fire prevention methods by Supervisor Norman G. Jacobson of the Deschutes. It is expected that these furrows will serve as a barrier to the spread of fire and that they will serve as lines from which back firing may be carried on in case of fire.

Rabbit bush, a desert plant which abounds in certain parts of the Deschutes Forest, after years of absolute worthlessness, is apparently going to have a value for crude rubber if reliance can be placed on an item recently appearing in a local paper. This item indicated that when the glossy leaved trees of the tropics had ceased to yield the milky sap on which the present supply of rubber depends, the rabbit bush of the Deschutes will be called on to furnish material for inner tubes, etc.

A new noon-time pastime has come to members of the District Office that consists in trips to the Portland landing field of the airplane patrol at Eastmoreland to receive reports from the aviators of fires they have sighted.

"Maps and Surveys" is to have three of the rooms vacated by the Bureau of Public Roads, on the sixth floor of the Post Office Building, and will use them for blueprinting and rectigraphing. An additional draftsman has been assigned temporarily to "Maps and Surveys" for the preparation of maps for the Office of Roads.

Jackson County has returned the supplementary cooperative agreement for the Jackson County section of the Medford-Klamath Falls road, in order that provision may be made in the agreement for the use of a stretch of road already built, the use of which will save the county $20,000 and involve only a slight change of grade and location.

T. W. Norcross, Assistant Chief Engineer from the Washington Office, is making a tour of inspection of roads under construction in southern Oregon. District Engineer P. H. Dater of the Forest Service, and District Engineer C.H. Purcell of the Bureau of Public Roads are accompanying Mr. Norcross on this trip. The inspection trip will later on be extended to include roads in Washington.

District 7 - Eastern District

District Forester Reed is in the White Mountains making an examination of lands of possible value for acquisition under the Week's Law. Mr. Reed will attend the conference called by the Society for the Protection of New Hampshire Forests.

District 7 - Eastern District (Cont.)

Forest Examiner Ira T. Yarnall has been transferred to this district and been assigned to timber sale work on the Pisgah Forest.

A complete telephone system for the Pisgah Forest is assured. Rangers and guards are trimming the rights of way for the Black Mountain-South Mills River and the Pink Beds-North Mills River telephone lines. These two lines are about 20 miles in length.

This work is along the lines of a general clean-up and repairing of trails, for the present season is the best to rid trails of sprouts, weeds, and rattlesnakes.

Ranger Carland on Bent Creek has added the following to his repertoire:

"How doth the busy bee
Improve each shining hour?
By flying to the sourwood tree,
And to the tulip's flower."

All this bursting song is occasioned by the addition to the list of special uses on the Pisgah of two commercial apiaries. The permittee claims to have had extensive experience in Porto Rico, and as a starter has bought $1,000 worth of sweet clover seed for distribution among the farmers to sow on abandoned fields of the vicinity.

Opportunities for road work seem to be at hand in North Carolina. Here is an appeal recently received by Ranger Coffey:

"Dear Ranger:

I am writing you about my road. I want you to come up over it where Bowman's road goes out and see if you think it will pay to fix it back for what wood I have got and let me know if you can get any help on fixing it up. Hope to hear from you soon.

Yours truly,
- - - - -

P. S. The trouble is avalanches, washouts, land slides, etc. 90% worse than July floods."

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WEEKLY BULLETIN

Forest Service - Washington Office

(Not for publication)

September 8, 1919.

More Money to Fight Fires

The President has approved the recommendation of the Secretary of Agriculture to Congress that a special appropriation of $2,500,000 be made for the use of the Forest Service to replenish its coffers with funds to carry on its business during the remainder of the year.

The present fire expenses have been met under authority of the Secretary of Agriculture by using funds appropriated by Congress for the transaction of the regular business of the Forest Service. This deficiency appropriation is necessary to keep us from closing up shop before the end of the fiscal year.

Fire Prevention Day

Fire Prevention Day, October 9, will be observed as a "patriotic" day as far as it is possible for the National Board of Fire Underwriters to suggest the character of its observance. The Underwriters, in cooperation with the Bureau of Education, are preparing an outline of a program which will be furnished all teachers in the country. Emphasis will be laid on an observance which will have as its principal object the bringing out of constructive ideas for putting an end to the prevailing careless tendencies now existing in the country at large. The tentative program provides as a feature an address or paper, either by the teacher or other speaker. As an aid to the teachers a sample address, following the plan of the Four Minute outline talks, will be distributed.

Arrangements have been made to furnish the district and supervisors' offices with literature. This will be mailed direct by the Board. The call on the field force is that everything possible be done to get the schools to give serious attention to an adequate observance of Fire Prevention Day and particularly to take an active part as speakers of the day wherever possible.

Assistance of this kind in the remote and isolated schoolhouses will be of the greatest value.

Electric Stoves for Campers

That campers in the National Forests may soon have electric stoves as a part of their camp equipment is the hope raised by an advertisement of the Snoqualmie Falls Lumber Co., which has installed 6,000 feet of transmission line in the woods.

The electric energy is developed at the mill. One electric logging engine is already in successful operation. It is planned ultimately to electrify the entire camp.

A full report of this experiment is to be made by the company at the Pacific Logging Congress now in session at Portland, Oregon.

Minnesota's Forestry Program

A special session of the Minnesota legislature convened on September 8. Among the questions to be considered is that of better protection of northern Minnesota from forest fires.

State Forester Cox has submitted to the Governor a forestry program. Mr. Cox maintains that fire prevention is necessarily tied up with proper development of the State's forests, and that this is not possible under the present system of taxation and forest administration.

Minnesota's Forestry Program (Cont.)

Some of the features of the program are as follows:

Revision of the tax laws to encourage growing of timber, relieving standing timber of taxation until it is cut, and taxing annually nothing but the land.

Increasing the allowances for fire protection to provide an adequate force of rangers.

Special appropriations for clearing away debris in dangerous places and for building telephone lines into the menaced districts.

Greater State authority over railroads, providing for condemning of engines which scatter sparks in cut-over districts.

Encouragement for grazing of live stock in the cut-over districts, to keep down brush and grass.

Building up State forests by reserving State-owned timber and State lands better adapted to tree growing than to agriculture, and acquiring privately owned lands which bear promising young timber, or which are best adapted to timber growing.

Encouragement to industries using wood products and giving a local market for the products of land clearing.

Greater inducements for planting and maintaining of woodlots.

Carrier Pigeons

The cooperation of the Navy Department in the use of carrier pigeons was offered the Forest Service last week. The representative making the proffer had much interesting information to give as to the value of carrier pigeo in carrying messages.

Flights of 600 miles in a single day have been carried out successfully. A distance of from 140 to 200 miles means but a two or three-hour fli for the average bird. It appears that birds are easily trained to make these flights, particularly where there is a mountain range or rivers to follow, and that it is fairly easy to teach them to cross the continental divide.

The representative stated that the Navy would gladly come to the hel of the Forest Service if we feel that pigeons would be of service to carry messages. The Navy is apparently prepared to establish lofts and train bird for flights.

To establish a successful carrier pigeon system it is necessary to lay plans during the coming winter to have the posts properly located and get the birds acclimated and begin their training.

Ohio Foresters Meet

The Ohio Forestry Society will hold its summer meeting on the fores holdings of the Carbondale Coal Co., and the Waterloo State Forest in Athens County. The coal company's lands, upon which forests have been planted, will afford an excellent example of a private concern that has practiced forestry on a large scale. State Forester Secrest will discuss the proposed Federal an State Forestry program.

Reimbursement for Equipment

The Comptroller has handed down a decision that all Forest Service employees, whose contract of employment does not require such employees to f nish horses and equipment, are entitled to the benefits of the reimbursement act for loss of or damage to horses and equipment in line of official duties.

The Manual will be amended accordingly and the change was effectiv September 1, 1919. This change ends the discrimination between the two cla of employees.

Farms for Employees

As an appreciation of faithful service the outright gift of a deed 40 acres of good agricultural land, free from incumbrance, will be made to e employee of a Michigan lumber company who remains until sawmill operations cease.

Farms for Employees (Cont.)

Twelve thousand acres of the company's forest land have been set aside for this purpose, and it is expected that at least 300 employees will be the beneficiaries.

It is estimated that the mills will be in operation for three years more.

To Investigate Pulpwood Supply

Senator Watson of Indiana has introduced a resolution to authorize the Secretary of Agriculture to make a survey and preliminary investigation of the approximate and possible available pulpwood timber supply in the central, western, and northwestern sections of the United States.

The inquiry is caused by the constantly decreasing supply of the chief material used in the manufacture of newsprint paper.

What is Breeding?

No doubt there have been many discussions by field men with members of grazing associations operating on the various Forests in the campaign for better stock, and a knowledge of official definitions as adopted by the Department will be of some value.

Purebred: A purebred animal is one of pure breeding representing a definite, recognized breed and both of whose parents were purebred animals of the same breed. To be considered purebred, live stock must be either registered, eligible to registration, or (in the absence of public registry for that class) have such lineage that its pure breeding can be definitely proved. To be of good type and quality, the animal must be healthy, vigorous, and a creditable specimen of its breed.

Thoroughbred: The term "thoruughbred" applies accurately only to the breed of running horses eligible to registration in the General Stud Book of England, the American Stud Book, or affiliated Stud Books for thoroughbred horses in other countries.

Standardbred: Applied to horses, this term refers to a distinct breed of American light horses, which includes both trotters and pacers which are eligible to registration in the American Trotting Register. Applied to poultry, the term includes all birds bred to conform to the standards of form, color, markings, weight, etc., for the various breeds under the standard of perfection of the American Poultry Association.

Scrub: A scrub is an animal of mixed or unknown breeding without definite type or markings. Such terms as native, mongrel, razorback, dunghill, piney woods, cayuse, broncho, and mustang are somewhat synonymous with "scrub," although many of the animals described by these terms have a certain fixity of type even though they present no evidence of systematic improved breeding.

Crossbred: This term applies to the progeny of purebred parents of different breeds, but of the same species.

Grade: A grade is the offspring resulting from mating a purebred with a scrub, or from mating animals not purebred, but having close purebred ancestors. The offspring of a purebred and a grade is also a grade, but through progressive improvement becomes a high grade.

Self Analysis by Indian Foresters

The following excerpts of the proceedings of the recent triennial meeting of the Indian Board of Forestry have been made by C. R. Tillotson of the Washington Office:

Self Analysis by Indian Foresters (Cont.)

"It has now been recognized that future progress in silvicultural research must depend largely on the extent to which the work can be decentralized."

"In selecting forest officers it will be necessary to guard against the mistake of selecting officers known to be partial towards office work. The duties of the forest officer lie in the field and in the consideration of schemes for future economic development, he should therefore be relieved of the unnecessary trammel of returns, reports, registers, etc., which form a feature of our present methods of office business."

"The formation of a special Forest Engineering Branch has been a long felt want, and the resolution of the Board recommending the creation of a special Forest Engineering service should go a long way towards the realization of the forest resources of India. These resources not only require improved methods of extraction, conversion and transport, but an entire new agency to push the manufacture and marketing of existing and new products. In most provinces it will be necessary to establish pioneer factories so as to prove to capitalists that these undertakings are remunerative and also as an index of the terms on which leases or concessions can be made."

"The establishment of sale depots for Government timber at main business centers also came under review and it will be necessary to watch the results of the agency recently established by the Government of India in Calcutta, and worked on a commission basis, for the disposal of timber from the Andamans and from other provinces who may choose to avail themselves of this opportunity."

"It is useful to have an insight into the opinions of others on the relations of the department with the commercial world, and Mr. Raitt's paper reviewing present-day treatment of applications from commercial interests was illuminating in affording us a criticism based on an insight of opinions gleaned from contact with both sides. The wheels of Government, of necessity, grind slowly, and too often result in loss of opportunity. Mr. Raitt, therefore, advocated short-circuiting existing procedure by enlarging the powers of forest officers and empowering them to deal with such matters without the necessity of existing delays in Government offices. The suggestion has much to commend its acceptance."

"Too much time is now taken up in meticulous detail and criticism with a view to avoiding mistakes. The only safe way of avoiding mistakes is by doing nothing at all."

"It has been recognized that the staff of the Forest Research Institute at Dehra Dun should be expanded and this matter had been given consideration by a special committee appointed for that purpose. This committee had decided to recommend that the institute itself be converted into a really fine building and the staff of Imperial research officers will consist of:-

1. The Sylvicultural Branch with one Sylviculturist and two Assistant Sylviculturists.
2. The Botanical Branch with one Systematic Botanist, one Ecological Botanist, one Bacteriologist, and one Mycologist.
3. The Entomological Branch with one Entomologist at headquarters and four regional Entomologists.
4. The Chemical Branch with a Forest Chemist, a Soil Chemist, and a distillation expert.
5. The Economical Branch with one Forest Economist, one Assistant Forest Economist, one Wood Technologist, one Minor Forest Product expert and experts in subjects such as paper-pulp and tan stuffs and dyes, for such periods as may be required.

Each Branch will have a number of subordinate assistants, while the Economic Branch will be equipped with plant sufficient for the production of commercial samples at the least."

Washington Notes

Colonel Graves has returned to Washington from his trip to the White Mountains where he made an address at the conference held under the auspices of the Society for the Protection of New Hampshire Forests.

Forest Products Laboratory Notes

At the meeting of the Vermont Wood Turners held at Brandon Inn, Vt., on August 8, the following resolution was passed:

That a resolution be adopted by this Association in hearty support of the work of the Forest Products Laboratory, at Madison, Wis., and that it be urged sufficient funds be granted by Congress to carry on to completion this work.

H. J. Elwes, the well-known writer on English trees and forestry, recently wrote as follows to the London Timber Trades Journal after paying a visit to the Laboratory:

After seeing the work that has been done, and is now being done, at Madison, I do not think that we shall ever be able to rival that admirable institution; and the forest products of the United States are so immensely more important, both in quantity and variety, than those in England that it is not likely or necessary that we should attempt to compete with Madison. During my travels in the West I was fortunate in meeting an old and very wealthy man, who began life, as I was told, by hewing railway sleepers in the woods and carrying them to the track with his own hands. He now enjoys a very large fortune, which he uses mainly for the increase of knowledge by liberally supporting the museums and teaching institutions of his state. I believe that if I had had the face to ask him, he would have given me a few thousand dollars for Cambridge University forestry teaching; but I was unable to risk the shame I should have felt if he had asked me, "What are your own people and government doing?"

The following is an excerpt from a letter received from the branch manager of the Mengel Mahogany Logging Co. in Africa. One of the important activities of the Laboratory is the box tests and experiments to produce better packages:

> "The British market is slowly getting on its feet again and we are able to secure more and more stuff from England. It is still too early to compare the cost of British goods with American products, but if the quality and cost compares favorably, it will probably be best to go back to the British market. It is heartbreaking to see the American goods come into the tropics, broken, smashed and damaged through careless packing. The American exporters seem to have no conception of what is necessary in preparing a package for export and the resulting loss is tremendous.
>
> We have already given you the details of our loss on the biscuits and previous to that we wrote you regarding the loss on the oil sent out on the deck of the 'C. C. Mengal Jr.' Now in the 'Monarch' and 'Benguela' shipments the same condition has occurred again. Out of six drums of turpentine shipped by the 'Monarch' we received one full drum, two half empty, and three empty, in spite of the fact that we were charged almost as much for the drums as for the turpentine. A heavy loss has also occurred on the other goods, which are still in the customs warehouse. The planer and bandsaw arrived in very bad condition. The packages were all smashed to pieces, the main frame of the planer was broken in four parts. What other damage occurred we have not ascertained. We will erect the machines as soon as possible and then advise you what repair parts must be sent out. Nothing but pure carelessness in packing is responsible for this damage. The bandsaw frame arrived on the beach at Seccondee outside of the few flimsy boards, which were supposed to have incased it."

Six aluminum-leaf-covered propellers, which have been five months in a room under 90 per cent humidity conditions, show no change in weight or blade angle. Three check propellers finished with the regular spar varnish coating have been constantly changing both in weight and pitch of blade.

Report has reached us that for all propellers being ordered by the Navy Department at the present time the aluminum leaf coating developed at the Laboratory is being specified for protection against moisture absorption. Approximately 100 propellers having the aluminum coating have been ordered to date.

The Fifth National Exposition of Chemical Industries will be held at the Regimental Armory in Chicago the week of September 22. The Laboratory has secured a space 10' x 10' and will show the commercial application of glues, principally casein, that have been worked on here. Actual demonstrations of

Forest Products Laboratory Notes (Cont.)

boiling and soaking tests of plywood will be made. Laminated baseball bats, bowling pins, hat blocks, shoe lasts, and so on, together with charts showing the advantages of laminated over solid construction, will also be shown. A panel illustrating aluminum leaf coating will be exhibited. Included in the exhibit will be a sterioptican and photographs of general interest illustrating various activities at the Laboratory. The Laboratory will have a chance to see the exhibit set up complete before it is taken to Chicago. The exact date and location will be announced in a later bulletin.

About 50 members of the Technical Association of the American Pulp and Paper Industry, which is to hold its meeting in conjunction with the Exposition of Chemical Industries in Chicago the week of September 22, are planning to spend Friday, September 26, at the Laboratory. The visitors will be shown about the Laboratory in the morning and in the afternoon there will be talks on the work of the Laboratory in general, preservation of mill timber, the actions of wood-destroying fungi, and structure and identification of wood. The visitors will be entertained by the Laboratory members of the Technical Association of the American Pulp and Paper Industry.

Arrangements have been made with the Mead Pulp and Paper Co., Chillicothe, Ohio, for a mill trial to demonstrate the feasibility of pulping of cotton hull fiber on a commercial scale. Recently a representative of the Laboratory attended a meeting of the Technical Association of the Pulp and Paper Industry and presented a paper entitled "The Suitability of Second Cut Cotton Linters, Cotton Shavings, and Hull Fiber for Paper Manufacture." The paper was very well received, and the Laboratory has since had a number of offers from pulp mills to carry on cooperative mill trials on a commercial basis.

At the suggestion of Mr. Calderwood, of the Section of Derived Products, a new solution has been used for determining the direction of the grain in wood. Instead of the usual ink, benzol with a little asphaltum pitch added for color gave surprising results. The solution is applied with an ordinary writing pen, and chases up along the grain like a spider after a fly. An additional drop at the end of the first line extends the line. This process is repeated until a line of any desired length is drawn.

During the last four days the two men working on the plywood warping tests made 14,000 determinations of direction of grain.

While in Chicago Mr. Hunt inspected the combination steel and wood ties laid in the track of the Chicago and Alton R. R. It was stated that they had been in the service three and one-half years. Mr. Hunt says from all appearance the ties look like a practical proposition provided they do not cost too much or rust out too quickly, or do not shift in the roadbed.

District 1 - Northern District

Associate Forester Potter and Acting District Forester Rutledge spent the past week on the Nezperce, Selway, and Clearwater Forests, getting first-hand information on the fire situation.

The Rocky Ridge and Bungalow Ranger Stations on the Clearwater Forest were destroyed by the forest fires. The Rocky Ridge Station was the telephone center for the Selway and Clearwater Forests.

District 3 - Southwestern District

Ranger Hudman of the Lincoln Forest reports the successful prosecution for violation of the game laws of a Mexican who killed five wild ducks. Ranger Hudman found the ducks at the Mexican's wood camp, and secured a warrant for his arrest. On being arraigned the Mexican pleaded guilty and was fined $25 by the Justice of the Peace. The fine was suspended during good behavior.

Fred Miller, after two years' absence from this country with the 20th Engineers, has returned. He goes to the Zuni District on the Manzano Forest.

Juan W. Carrego, Forest ranger on the Jewett District of the Datil, has resigned. Ranger Carrego showed his mettle last year when in line of duty, he, with several State officers, were on the trail of some cattle rustlers. The officers surprised the rustlers in the act of slaughtering a cow bearing a brand other than their own. A desperate shooting occurred as a result of the surprise.

Are bears predatory animals? This question has been raised in this district and field men have been called on for opinions and evidence. In making this call the district office suggests that positive evidence is desired, not circumstantial information, that distinction be made whether grizzly or black bear, and makes mention of a few superstitions, such as, that many cowmen assert cattle will not graze on the same range used by sheep; that many people still believe porcupine shoot their quills at their victims, etc., etc.

As an editorial note it is added that at a meeting last winter E. W. Nelson, Chief of the Biological Survey, stated that bears are considered game when not destructive to stock, but that when bears become so numerous as to be a menace to stock they become predatory animals. This is a simple classification at least.

R. E. Marsh is now in charge of Silviculture in the District office, succeeding Mr. H. H. Chapman, who returns to the Yale Forest School.

Several new bunches of whitetail deer have recently been reported from the Santa Fe Forest, which seems to indicate that the whitetail deer is spreading northward.

The sign shop to be in operation this winter will busy itself with signs for salting grounds, and in anticipation of this program field officers are getting requisitions ready.

District 4 - Intermountain District

Twenty-five stockmen have signed a petition asking for the addition of approximately 6,400 acres to the north end of the Humboldt Forest. This area was at one time part of the Forest but was eliminated in 1911.

Two big international motor trucks, turned over by the War Department, have been received in Ogden and have been overhauled. The trucks were in excellent condition and the overhauling was not a big job. One truck goes to the Payette Forest, the other to the Idaho Forest. Both are for use on road work.

District 6 - North Pacific District

An exhibit prepared at the Portland library (East Side branch) for a public-school class in civics includes the National Forests, wheat fields, dairy farms, water supply, and wool supply, as indispensable factors in the life of the city. The importance of the native softwoods and hardwoods to the furniture industry is emphasized and shipbuilding in Portland is described. The exhibit material for the study of the importance of the forests to the civic life consists for the most part of contributions to the local newspapers by A. G. Jackson and Howard B. Oakleaf, and of pictures of carloads of logs, Wind River Nursery and its activities, fighting brush fires, eastern Oregon sheep, lookout houses, etc.

Four hundred thousand dollars is to be spent on the improvement of the roads through the redwoods between Grants Pass and Crescent City on the Siskiyou Forest. According to Rollin Laird, recent guest in a Portland hotel, who in his love of forests once walked from the Straits of Juan de Fuca to Aberdeen, Washington, the redwoods are more valuable from a scenic viewpoint than for commercial uses and rank with the Columbia Highway and the caves of Josephine County as attractions for tourist travel. Mr. Laird boosts enthusiastically for the "Save the Redwood League." This recalls the assertion of Col. Graves, made during his recent trip by auto from San Francisco to Grants Pass, that "to destroy these redwood forests along the Highway would be like destroying Niagara Falls or Crater Lake."

The herbarium of the Deschutes Forest, collected under the supervision of Grazing Examiner F. V. Horton and consisting of 226 different grasses, sedges, weeds, flowers, trees, and shrubs classified and identified and 50 specimens awaiting identification at Washington, D. C., contains a hitherto unknown plant discovered by M. L. Merrit, of the District Office, in the Paulina Mountains. It is unimportant to grazing but interesting botanically. It "is closely allied to the common daisy. The petals, or more properly speaking, the ray flowers, as well as the true flowers about which they are grouped, are of a delicate pinkish white and the whole composite bloom greatly resembles the 'ever-lasting' so often seen in the old-fashioned gardens of three decades ago. The herbarium contains also a hitherto unknown, and yet unnamed, ornamental thistle."

District 6 - North Pacific District (Cont.)

"Wisdom Field" has been suggested as the name of the Portland aviation field, in honor of Lieutenant Everett Stanton Wisdom, a Portland boy who was killed in his plane while on his way to become a unit in the airplane patrol of the Cleveland National Forest in District 5 and who "deliberately brought about his own death to save a comrade. He was flying in a blinding fog when a great bluff suddenly cast its outline in the path of his machine. Knowing that a head-on drive meant instant death for Lieutenant Kelly (his observer), who was in the forward seat, Wisdom kicked his controls to throw hi side of the plane against the bluff, and received the death blow that would otherwise have killed Kelly." That the proposed field in Portland will be use largely for fire patrol is a minor reason advanced by his fellow birdsmen that it should be named for him.

Diamond Lake, on the Umpqua National Forest and about nine miles north of Crater Lake, is the scene of an unusual interest. By some strange agency thousands of fish, mainly rainbow trout, were suddenly killed, as if by an underground explosion. The cause of the phenomenon may never be known, but several possible explanations have been made. The state fish warden believes that a disturbance in the lakebed caused the phenomenon, basing his theory on the fact that the waters of the lake, normally clear, are now muddy. H. L. Engles, who knows the lake well, believes that a geyserlike hot spring erupted more violently than usual, killing the fish. In this connection it is said that the water along the edge of the lake is cold, but near the center is almost too warm for drinking. A sudden gush of hot water would kill hundreds of trout before they could reach the snow water near the edge of the lake. This, with a high wind, would affect the lake like a mild volcanic eruption, making the water rough and muddy. The theory that dynamite caused the destruction is scouted. Still another theory advanced is that some form of vegetation killed the fish.

The Alaskan Engineering Commission has been granted by the Forest Service a free permit for about four million feet of timber on the Chugach Forest along the right of way of the Alaskan Northern Railroad, which is under construction by the Commission. This permit is issued in accordance with the special provisions of the law authorizing the construction of the railroad. This timber will be used for piling, telephone poles, railroad ties, and as general construction lumber.

The five De Haviland airplanes to supersede the Curtiss craft recently in operation in District 6 have arrived. The base has been removed fr Salem and Roseburg to Eugene, from which point the De Havilands, capable of traveling 125 miles an hour, will maintain daily patrol of the forested area between Eugene and Portland, and Eugene and Medford.

Roy Mitchell, of Sandy, Oregon, who was discharged from the Army recently, after having served two years in France, was killed August 20 by a falling tree while fighting fire in the timber along Roaring River, Oregon National Forest.

Two inquiries from prospective paper-pulp operators in Alaska were received last week. Preliminary examination of the tracts applied for will b made by the local officers on the Tongass Forest.

Acquisition

Forest Assistants Frank T. Murphey and Courtland S. Winn, just returned from overseas service, have been temporarily assigned to the Natural Bridge Area.

Forest Inspector W. W. Ashe has returned from a trip to New Hampshi made in connection with White Mountain condemnation cases which are expected to come up in September court. While there Mr. Ashe and Forest Supervisor J. Fritz spoke on Acquisition matters before the Sunapee Forest Association at Sunapee Lake.

Sergeant E. D. Bischoff, recently a member of the Marine Corps, ha been appointed Forest Ranger and stationed in the White Mountains.

Sergeant M. A. Mattoon, who served with the 20th Engineers in France and was a member of Acquisition in 1917, has been given a temporary appointment and will be stationed on the Pisgah group of Purchase Areas. Mr. Mattoon has specialized in logging and mill work.

Captain E. V. Clark, just returned from overseas, where he was with the 20th Engineers, has been restored to the rolls. Captain Clark will be detailed as Assistant to Assistant Forester W. L. Hall in developing the Enlarged Acquisition Program.

Forest Examiner R. Dieffenbach has returned to Washington from Buena Vista and Harrisonburg where arrangements were made for the organization of a force of men to work on computations of acreages of lands recently surveyed for acquisition. Examiner of Surveys E. R. Conrad will be in charge of this work.

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WEEKLY BULLETIN

Forest Service - Washington Office

(Not for publication)

September 15, 1919.

WHERE WE STAND

After nearly two months in the field, I am taking up again my duties in the Washington office. At such time it is natural to take account of stock. In more ways than one, we are at a turning point. We are nearing the end of a field season made notable, for one thing, by an extraordinary fire emergency. We are also winding up the war emergency period. Our men are returning from France and taking up their former positions. We have passed through a time of crisis and unsettlement, and we are not yet straightened out on our new course. We are still facing many difficulties.

On the whole, we have come on well so far. The fire situation has been creditably handled. We came through the war period without being disorganized and with successful meeting of its demands. Nevertheless, it is now apparent that there is much to do to rebuild and restore our organization to the state of efficiency necessary to make thoroughly good. We must readjust our fire protection plans. We must meet the results of changes in personnel, and to some extent reorganize because of these changes.

I recognize that there are going to be more personnel changes. How many more will depend partly on how long it takes to secure action from Congress that will make our Forest Service salaries commensurate with the character of the duties involved and the pay which our men can command in other lines. The present situation is one which places upon me serious responsibilities. I am glad to feel that, in my efforts to meet these responsibilities, I can count on the loyal trust and active support not only of the leaders in our organization but of the rank and file as well.

Many of our policies require restatement. I am not sure that they are understood with sufficient clearness by all of our men, particularly those who have somewhat recently entered the Service. The Manual lays down procedure and tells what to do, but something different from the Manual is required to give the grasp of underlying principles and policies which all must have if our task is to be performed with intelligence and enthusiasm.

It is my hope that we can make the Weekly Bulletin more useful than it has been, as a vehicle for discussion of Forest Service principles and policies. To do this will require that more men contribute to it. When questions of policy and principle are not clear to members of the field force, it would be helpful to have letters of inquiry addressed to the Bulletin. This would give opportunity for replies by which many might profit.

We have launched a movement of very great importance to the country, for the extension of private forestry. During the summer this movement has been making steady progress. The lumber industry, the wood-using industries in the East, and the general public are becoming increasingly interested. I have myself discussed the subject during the summer with many western lumbermen, both individually and in meetings of lumbermen. Our proposed program of action is becoming very concrete. On this subject the Bulletin will have more to say later.

To meet our responsibilities along all lines will require the best effo that we can all put in. Now of all times we must avoid falling into a rut. It is a time for alertness, energy, and cooperation from the top to the bottom, an all along the line. I look to every man to do his share.

HENRY S. GRAVES.

DEVELOPMENT OF THE MT. EVANS AREA

Address by Colonel Graves before the Denver Civic Association,
Denver, August 22, 1919

During the last few years there has been a new movement West. Our nation has discovered that it possesses within its own boundaries natural wonders, mountains, forests, streams, and lakes unmatched anywhere, presenting attractions of unique character for the seeker for rest, recreation, and health, for the tourist, for the sportsman, for the family desiring to establish a permanent summer home. The West has awakened to the fact that it has a vast resource, heretofore little appreciated, that is in great demand and awaits only development to become one of the most productive resources of the country.

The new movement to the mountains from all sections of the country may be attributed to a variety of causes: the betterment of roads, the automobile, the diversion of travel from Europe, advertising of the recreation features of the mountains, and prosperity itself. But there is also a new appreciation of mountain recreation, a new impulse to seek the wholesome environment of the hills and forests, to refresh mind and body through the vigors of camp and mountain life. The movement to the mountains is a permanent one, now in its beginning, but certain to expand in proportions that I believe few today realize.

We have today the task to provide for this movement, to meet the demand that is already here, to make available for the multitude of visitors the recreation grounds they seek to use and enjoy.

I have for a number of years been studying this problem in its relation to the National Forests and to the part that should be played by the Federal Government. I had previously had the opportunity to study the methods used in European countries in developing their recreation resources. The question is of great importance in connection with the National Forests because these comprise very large areas of mountain and lake country, many of our best fishing and hunting grounds, and other features of attraction for recreation use.

Colorado has a marvelous endowment of mountain resources, presenting in every section of the mountain ranges features of interest and attractiveness, and opportunities for recreation development. With more than two hundred peaks over 12,000 feet elevation, capping a rugged mass of mountains of stupendous magnificence and primal character, with the deep canyons, the streams and lakes, the extensive forests and attractive open parks, Colorado has a great variety of features that appeal to the widely varying tastes and desires of seekers for recreation.

Here is a wonderful resource of vast potentialities. It is of great importance to conserve it and to provide for a development that will really meet the opportunities as well as the obviously apparent demands.

In this problem there is first a protective feature, and then the problem of development. That the great majority of the recreation features of the State are publicly owned is fortunate. It is an asset that should be jealously guarded, and you have already in various places begun the process of acquiring back for the public areas needed for the use of campers and other visitors.

Let me emphasize the protective features connected with the Forests. The attractiveness of many of your mountains is due to the forests that clothe their slopes. Hundreds of places in this State have been scarred and made commonplace by the destruction of the forests in the past. Contrast the hot dusty trail on the burned mountain slope with the cool path of the deep forest. One of our first problems has been to protect the forests from destruction, and to restore, as fast as can be, what has been destroyed. Not only is organized protection necessary, as we have undertaken it on the national property, but there must be conscious cooperation on the part of every user of the Forest. Still again, in cutting trees it is essential to clear up the débris and tops.

This is necessary in building roads, and the public should insist that there be left no piles of brush along the highway that may result in a vast damage through burning the forests along the route. This constitutes one uncompleted feature of the portion of the Mt. Evans highway recently constructed by the city, for there still remain dangerous tops and brush along a certain distance near Soda Pass.

We should, I believe, do more in the way of requiring proper brush disposal on private lands. I do not think the public can afford to permit a slashing to be made that menaces the entire surrounding country. Such a menace exists near Echo Lake. We are discussing the expenditure of public moneys in developing that section. The scenic values that we seek to make useful and enjoyable are menaced by these slashings. I have been urging the different States to enact legislation compelling operators properly to dispose of their slashings, in such a manner as is required on sales on the National Forests. I hope that this may also be done in Colorado.

A further protective feature is to correlate the use of the various resources with the recreation resource. The saving of forest tracts at scenic points, as along roads and trails; the adjustment of grazing to safeguard camping places needed by tourists, are considerations that are being planned as far ahead as we can see the special needs.

Still another feature is that of protection of the game and fish. The Forest Service has been working with every resource at its command to do its part in conserving and building up the wild life within the National Forests. Here is a point where the State and Government combine their respective functions, and they are making real progress in a joint enterprise.

But protection is only one feature of our recreation problem. We have reached the point of constructive development of the region, to make it possible for the visitor to reach the various points of interest and attraction, and to provide adequate facilities for his needs and comfort after he reaches the State.

The recreation problem in this State is peculiarly one in which the public should take the leadership and which it should support with liberality. Most of the mountain features are on lands publicly owned. The building of roads and trails to open up the attractions is one in which the Federal Government itself should contribute very liberally, especially on the national property.

The work of road and trail building already projected will be a long step toward tying together the different scenic portions of the State, and make possible tours from point to point that are today difficult.

But we need more than connecting links of transportation. We need adequate facilities for the accommodation of those who come here. Much has been said about the need of providing good hotel facilities for visitors. I recently heard a railroad man say to an Oregon audience: "Build hotels and more and more hotels, and the people will still come to Oregon in greater numbers than you can accommodate them." The need is very evident in Colorado. But we need to give special encouragement for hotels and other facilities at specific points, so that we can encourage people to take tours and know that they will find comforts where they need them. This means organized planning, and specific encouragement to hotels, especially to the small wayside inn, to provide a service that perhaps heretofore the owner has not been able or known how to give.

But I am particularly interested in planning for the part that the Federal Government shall play. In its last analysis this means not only planning, but securing the aid of the general public in furnishing means for development work, for the roads, trails, rest houses, shelters, camp improvements, signs, and all the other things that cost money. The extent to which the public aids this work depends, according to my experience, on its confidence in a businesslike and far-sighted planning, and in stable and continuous policies in carrying out the plans. If the nation has confidence that we are building up the recreation resources in their proper relation to other undertakings to which the public contributes, under broad plans that provide for steady and progressive development, in which the various public and private agencies participate, there will be no question of the support that will be given. But changes of policies, conflict of local interests, haphazard proposals, unrelated to accepted National policies, confuse the country and retard progress. There have been in some instances confusion and real delay caused by differences of opinion over methods of achieving an objective which everyone desires, when a great deal could be done with means already at hand.

There is a great deal of confusion in the public mind about the question of whether or not the recreation features of the National Forests should be developed by transferring larger areas here and there to the status of National Parks. I notice references from time to time in the press of Colorado to the "rivalry" between the Forest Service and Park Service in recreational development. Such an impression is very misleading and certainly clouds the problems that all of us are seeking to solve with the single end of maximum public service.

The National Forests, every one of them, are recreation grounds for the public and are so used by several million people. In fact, I do not know of a single Forest, hardly a single ranger district, that does not contain some attractive features for the visitor, the camper, the sportsman. We have the duty to develop this resource just as urgently as the forest, the grazing, and the other resources that may be closely related to the industries of the nearby region. And we have been going forward with the work not only of safeguarding the scenic values of the Forests, but developing them, through our roads, trails, camping grounds, sign systems, the building up of wild life, and in various other ways. The National Forests touch many of the existing Parks, and the roads we are building are in numerous cases approaches to these parks; and in such cases, the recreation use of the National Forests and Parks closely correlated. No confusion exists there.

The difficulty concerns the question of creating a large number of new parks from areas now in the National Forests. Heretofore the conception of a National Park has been so definite and clear that there has been no particular difficulty arising from the fact that the two classes of reservation are under separate Governmental Departments, and administrative cooperation has been an easy matter. There is now, however, a new movement, looking to the creation of a large number of parks out of the National Forests. This movement is confusing the public, confusing to Congress, and embarrassing to the Forest Service that is working on long time plans of progressive building up of the areas. The proposals that are being made in large numbers would radically change the policy of what constitutes a National Park, and under the system of separation of the executive departments now existing would lead to great confusion, duplication of organization, and decreased public service.

The National Parks as originally conceived were confined to a limited number of areas of exceptionally commanding and superlative scenic character. They are of such a character as justify the present policy of having the State cede to the Federal Government all jurisdiction over the lands, life and property, and justify their handling as distinct Federal domains quite independently of the industrial life and interests of the States and localities. They are dedicated solely to the preservation of the natural wonders and enjoyment of them by the general public. Very properly these areas should be withheld from industrial use of the timber, forage, and other commercial resources.

We have now, however, a demand for a more rapid development of the scenic features in all the public properties, such as exist in scores of places in the National Forests. Proposals are being made that depart from the conception of parks heretofore held (and in my opinion properly held). For example, in the State of Washington, proposals have been made for the creation of parks in the Olympic, at Mt. Baker, the Index region, Mt. Adams, Mt. St. Helens, Lake Chelan and portions of the intervening country. In Oregon, proposals have been made to make parks of Mt. Hood, Jefferson, the Sisters, portions of the Siskiyous, and I believe other points. Some have gone so far as to suggest that the entire crest of the Sierras, the chief points in the cross ranges, and the main features of the San Bernardino and San Jacinto Mountains be included in National Parks. I could extend the list to many points in the Rockies, including at least nine areas in Colorado, points in the outlying ranges, such as in the Black Hills, the Big Horns, the Catalinas and the Sacramento mountains, and so on; and, if consistent, scores of other areas would naturally follow. The idea is being promoted to a point that in order that there may be no objection to this great park extension, it is suggested that grazing, water power development, acquisition of mining claims and even limited cutting of timber might in places be allowed. In short, the movement would practically partition the National Forests, and in considerable part provide in the new parks the same sort of administration as today exists in the National Forests. To such a policy I am opposed in the interests of the greatest service to the public.

It is obvious that before we go further, we must formulate a Federal policy that will end the present confusion arising out of present jurisdictional situation, and find a way to develop the recreation resources, using in a common effort all the skill and power at command of the Government.

I am therefore seeking two things; first, to view the objectives and problems of recreation development in each region without reference to names and departments, and to promote this development with all the resources intrusted to me; and second, to formulate for presentation to the higher authorities in the administration, a policy to overcome the departmental difficulties that are apparent to all, with a view to a really effective organization of the various Governmental agencies in a joint working out of the constructive program of recreation development.

I have been personally studying this situation on the Pacific Coast as well as in other sections of the National Forests. The immediate objective of my present visit to Colorado is to get a first hand view of the Mount Evans problem, which the representatives of Denver are urging as a National Park.

The two days I spent on the Mt. Evans area gave me an excellent grasp of its character and of the problems of development. I share your enthusiasm over the beauty of the mountain and the scenic features about it. No one can go into the region without feeling its inspiration. One leaves it with the urge strong within him to return and again enjoy the forest trails and the views of the great cliffs and gorges and wide spreading panorama of the Colorado Rockies.

How may it best be developed? I see first of all the problems of construction of roads and trails, arranging facilities for getting people into the region, and providing camp grounds and rest places for them. I see a great deal that can be done immediately with facilities and means that we now have. I can see no reason for delay in initiating such undertakings to the extent of the resources that can with propriety be devoted to this enterprise. The development of the Mt. Evans region should be intimately related to the splendid system of mountain parks that Denver has with such great wisdom and foresight been creating.

The arrangements for beginning the extension of the Government portion of the Mt. Evans Highway have already been made and I understand that work will begin at once. This has been awaiting the completion of the city's part. This involves an allotment of $46,000 that has already been provided. I hope that I may be able to arrange for a further allotment another year of from $30,000 to $50,000, with a view to carrying the road to Echo Lake, that seems to me a first objective of road development. Some cooperative features with the city will doubtless be necessary in this undertaking.

Some further study of our funds will be necessary to determine how fast the trail system can be extended and other improvements constructed. The building of a road to Echo Lake should, however, be predicated on bringing Echo Lake under public control and providing for its improvement for the use and enjoyment by the public. Other things, too, can be done, involving joint planning by the Government and city. For example, there is no regular arrangement for people to secure horses and outfits to go up the mountain. I wonder how many people in this audience have been to the top of Mount Evans or even to the rest camp and Bear Track Lakes? I wonder how many would know just how to obtain facilities to take a four or five days' tour of the region? Let us fix that situation as soon as possible and make it easy for the people of Denver as well as outsiders to do what can be done today with comfort.

The officers of the city inform me that they feel that the creation of a National Park is essential. I do not believe that the change of name and status will hasten the actual development of the area. Certainly it would probably retard the beginning of such development, for this can actually be started at once. I am informed, however, that it is the name that is sought because of the advertising value of the term "National Park."

The proposal to create a park here touches, however, a very far reaching question of National policy. One can not consider this project without considering a large number of others, a number of which are in this State. There are numerous other cities which are urging the creation of National Parks and which have the same view of the advertising value of the name as the representatives of Denver. I do not fail to appreciate the value and need of advertising, and the Government should do its part in this. I consider, however, that development is the essential thing, and if this takes place, advertising of the attractions can be taken care of in a way to teach the people about them. I cannot agree that the advertising feature in itself is an adequate principle to govern an action by the nation, especially when that action would be very far reaching in its effect on the policy of administering the public forests, and involve by its precedent a radical modification of the policies heretofore established.

I am unable, therefore, to concur in the proposal for a park, but am going forward with the development of the region to the extent of my ability without further reference to that question.

Colonel Greeley Gets Back on the Job

Although not yet discharged from the Army, Colonel Greeley has been detailed by the War Department to report to the Secretary of Agriculture and to perform such duties as may be assigned to him, in conjunction with those assigned to him by the War Department. Consequently he has returned to his desk in the Atlantic Building, and is gathering up the threads of Forest Service work.

A Correction

In the Weekly Bulletin of September 2 credit for the pamphlet, "Pulpwood Consumption and Wood Pulp Production in 1918," was given to the Office of Industrial Investigations. This is an error. The author of the pamphlet is Mr. Franklin H. Smith.

Washington Notes

Mr. Potter is back at his desk after a four months field trip the first part of which was spent in District 3 and the last three weeks on the fire-fighting job in District 1. Incidentally he accompanied Secretary Houston on a trip to the Grand Canyon, through southern and central California and to Salt Lake City where they attended the stockmen's land convention. Mr. Potter says that considering the conditions under which the Forest Service has had to work during the past three years we have held our own mighty well all along the line.

A. F. Hawes has been appointed to take the place of H. E. Surface in the study of the pulp and paper industry. Mr. Surface, as has been pointed out before, left the Forest Service to accept a position with the Income Tax Division of the Bureau of Internal Revenue.

The Office of Forest Investigations has purchased a model of the Wagon Wheel Gap Experimental Area. The model is about 2 feet by 3 feet in size and shows the limits of the watersheds, the location of the meteorological stations, snow scales, snow-scale areas, and buildings. It does not, however, indicate the elevations or the timber types.

Benton MacKaye's bulletin, "Natural Resources and Employment," is now available for distribution. This bulletin is of particular interest to the Forest Service. It was started while Mr. MacKaye was a member of this Office and contains a chapter which has to do with employment on forest areas.

Forest Products Laboratory Notes

A representative of the West Coast Lumbermen's Association has asked the Laboratory to furnish him information regarding the kiln drying of lumber. This information is to be used in the Structural Timber Handbook. Its object is not to show a kiln operator how to get properly kiln-dried lumber, but to enable a layman to tell whether the product that he is buying is properly seasoned or not. The request is unique, inasmuch as it is the first instance that has come to the attention of the Laboratory of the lumber manufacturers' taking particular pains to inform their prospective buyers as to means of testing for themselves the product they are purchasing. This seems a very distinct step in the right direction, for the manufacturers must be in a position to furnish material that will satisfy the tests they are advising.

A satisfactory container has been designed for each of the nine different tin cans used for paint by the War Department.

G. M. Hunt is in Philadelphia demonstrating Laboratory glue to the Naval Aircraft Factory and studying the problem of the deterioration of airplanes and airplane parts from molds while in storage.

District 1 - Northern District

On August 20 the estimate of fire suppression costs for this District was $1,277,000 for the fiscal year, with 1,755 fires reported for the calendar year to August 20, by classes as follows:

Class A..............	818
Class B..............	546
Class C..............	391
Total	1,755

The origin of the various fires is reported as follows:

Railroads...........	250
Campers.............	205
Brush Burning.......	118
Lumbering...........	12
Lightning...........	756
Incendiary..........	45
Miscellaneous.......	20
Unknown.............	349
Total	1,755

The cost of fire suppression in this District for the period from July 1 to August 31 reached a total of $1,767,000, nearly a million dollars a month. The acreage burned is given as 1,150,000 acres, which is probably an underestimate. Recent rains and lower temperature have materially reduced the fire hazard. The ranks of fire fighters are gradually being decreased and some of the veterans are drifting back to the District Office, notably Elmers Koch, J. A. Fitzwater, J. A. Girard, and C. N. Whitney. Associate Forester Potter has returned to Washington after spending three weeks in this District studying fire and grazing problems. His presence during this trying period did much to sustain the morale of participants in the fire-fighting game.

The chief work now after the smoke lifts is to clean up as much of the wreck as possible and find out exactly what the damage has been. A bigger job is to prevent a repetition of the disasters which visited several of the Forests. This problem demands a great deal of thought. There must be a way to handle the fire problem so as to prevent wholesale burning, such as occurred in many places during the past two months.

Meanwhile, from the standpoint of Silviculture, we are interested in knowing what actually happened--the loss in merchantable timber, in young growth, in reproduction, and how this loss will affect the silvicultural management plans of the Forest. It will affect them not only in the actual loss of growing stock but in the factor of safety which we will be forced to allow in case we are unable to do any better on the average in future fire seasons. Obviously a revision of the timber estimates and age-class data will be necessary, as well as a revision of planting plans. We should have maps and estimates of the damage both as a matter of statistical fire record and as a means of revision of the silvicultural plans of management.

Also there may be considerable bodies of fire-killed timber in which we can get some "undertakers" interested. This isn't a cheerful prospect, but now that the timber is dead, every effort must be made to market that which is merchantable and salable.

District 2 - Rocky Mountain District

It appears that the difficulties of 1918, in regard to the transportation of livestock to market from the National Forest ranges, is going to be repeated this season. The outlook is serious and about the best the Service can do is to advise permittees to hold their stock on their allotments until they are reasonably sure that cars will be available on the dates ordered. The following, quoted from a letter from Mr. Wilson of the D. & R. G. System, outlines the present situation:

> "***this subject is one that is being given considerable attention daily. The situation now, however, appears to be so serious as to forbid me giving you any promise as to full supply of stock cars. In fact, as stock cars are pooled in this territory, we are absolutely dependent upon eastern connections since practically all of the stock loaded on our line moves through to eastern connections.
>
> We are rapidly losing stock cars, and unless we get some assistance immediately, we will be extremely short. Trust, however, that our appeals to the Regional Director will afford relief."

The fire on the Washakie Forest which started August 16, near Brooks Lake, burned over about 500 acres, most of which was timberland. Part of this area has been cut over by the Wyoming Tie and Timber Company, who have been operating in this vicinity for several years. A complete estimate of the damage has not yet been made, but preliminary estimates indicate that at least 500,000 board feet of saw timber and a quantity of ties were destroyed. The fire appears to have been started by the road construction company which is building a road through the Washakie Forest to the Yellowstone Park. The construction company has not admitted responsibility for the fire, but they have paid all their employees for the time spent on the fire, and the timber company has also paid the wages of their employees for work on the fire, under that section of their contract which provides that they shall pay not to exceed $1,150.00 annually for fire fighting on any portion of the sale area.

District 3 - Southwestern District

The resignation of Ranger Fred Haworth of the Walnut Creek District of the Prescott has been received. Mr. Haworth entered the Service in September, 1915, and has thus completed four years' service. He leaves an excellent record and much regret is felt over losing his services.

Ranger Johnson, of the Santa Fe, recently planted six cans of mountain trout in Santa Fe Canyon and one of the nearby timberline lakes. The fish were packed in with an overnight stop and suffered only 15 per cent loss. Ranger Johnson suggests that whenever fish are kept in the can for any length of time, the can be frequently emptied and scoured and the dead fish removed.

Jonathan L. Hughes, who resigned as Forest ranger last May from the Manzano force, has been reinstated and will immediately take over the Canjilon District of the Carson. Mr. Hughes' former period of service dates back to May 1, 1911, and his assignments were ranger districts on the Sitgreaves, Gila, and Manzano.

The revised New Mexico game law adopts the entire migratory bird law and the regulations issued thereunder as the State law. This, therefore, makes it possible for New Mexico Forest officers to bring prosecutions for violations of the Federal law in the state instead of Federal courts, with the promise of more expeditious action.

Carlos Vierra, of Santa Fe, the well-known artist and authority on native New Mexico architecture, has drawn plans for the new custodian's residence on the Bandelier National Monument. The plans are exceedingly attractive and the building will be erected at once by Supervisor Kircher. Ranger Don S. Sullivan, formerly of the Coronado and Tonto, has been appointed to take charge of the Bandelier Monument and will enter upon his new duties within a few days.

Walter C. Lowdermilk, formerly Forest Examiner on the Santa Fe, now on military leave, writes from France that he has accepted a proposal to spend three months or more in Spain cruising a large body of timber. His return to this country is accordingly indefinitely delayed.

Examinations in the vicinity of the Forest Valley Experiment Station show that the number of seedlings of 1919 germination is closely associated with seed supply. Moisture conditions have been so favorable that seeds germinate everywhere, almost regardless of seed bed. It is a very common sight to see seedlings growing on logs. Twenty-five thrifty seedlings were counted on one fallen tree trunk, and others would doubtless show a higher count. They have been found growing in the rosettes of herbaceous plants. Examinations indicate that abundant germination is as a rule confined to areas where the seed supply in 1918 was abnormally heavy. Although the crop on the Coconino and Tusayan was generally good, some areas bore a much heavier crop than others. It is the areas of exceptionally heavy seed production, usually virgin stands, on which we find the high seedling counts. The number of seedlings apparently is not strictly proportional to the seed crop, because on areas where only a light or medium crop was produced, the bulk of the seed was eaten by rodents. It is only the surplus above what rodents consume which figures in germination.

District 4 - Intermountain District

District Forester Kneipp has returned from a ten-day trip to the Teton Forest, where he spent most of his time accompanying Governor Cary and party over the area proposed as an addition to the Yellowstone National Park.

Range conditions are very unsatisfactory on the Teton Forest and many cattle have had to be removed from the Forest temporarily, but the situation so far as the elk are concerned is not particularly alarming.

Grazing Examiner Martineau was in the District Office recently after a month spent in examinations of larkspur eradication work on the Caribou and Targhee Forests. He expects to join the grazing reconnaissance crew on the Fillmore in a short time.

Lieutenant Hendrickson, formerly Chief Clerk on the Sawtooth Forest, has returned to Ogden after spending eighteen months in France as a member of the 20th Engineers. He is somewhat uncertain regarding his plans, but will probably resume work with the Forest Service in the near future.

E. H. Hall, In Charge of Planting, has returned from a trip to the Lemhi, Sawtooth, and Minidoka Forests. On the Minidoka Forest a number of successful yellow pine plantations were examined. One area of 45 acres, planted in 1914, now averages 520 trees per acre. These trees are all strong and healthy, have grown from 4 to 8 inches during the past season, and average 18 inches in height with a maximum of 30 inches. Since there is no native yellow pine on the Minidoka Forest and a large local demand for all kinds of timber, this plantation will be watched with much interest.

Ernest Winkler, Inspector of Grazing, has returned from an inspection of the Lemhi Forest with a report that he found range conditions extremely dry but that stock was generally up to normal condition. Considerable trouble has arisen in that section between the cattle and sheep interests on the public range, and recently resulted in a shooting affair in which one sheep herder was severely wounded. The sheriff is taking drastic measures to avoid further trouble in the Upper Lost River country. Mr. Winkler visited for a short time at the headquarters offices of the Challis and Salmon Forests. The hay crop in the Lost River country is considerably below normal, while in the Salmon River country it is probable that the crop is about normal.

District 5 - California District

They have an Owl in the Klamath country, who the Judge admits is a crafty "bird," although he wears no feathers. Since he is an Indian, however, he may have worn feathers some time, at that. His name is Corham Owl, and Judge Van Fleet in the United States Court at Sacramento has just sentenced him to ninety days in the Klamath County jail for wilfully setting a forest fire in Perkins Gulch, near Happy Camp, on the Klamath National Forest. The fire was set on August 11, 1918, or just about a year before he was brought up and tried.

Owl was out of work at that time. Not that that should worry an old Indian - but he had been out of work long enough so that he was also out of gambling money, as well as grub. This was a real calamity, which would make any Indian scratch his head and think hard. Uncle Sam, he was sure, had lots of money. And Uncle Sam paid money for fighting forest fires. Why wouldn't it be the quickest way to get the necessary "bucks" just to touch off a little fire, since this country was in one of Uncle Sam's National Forests, and then be on hand to help put it out? How could anyone find out how it started? All this he afterward confessed to United States Forest Service Chief Investigator C. V. Brereton, through Interpreter Nicholas Effman; for this old Owl speaks no English.

The fire was a "roaring" success from the standpoint of fire and work. Fanned by a stiff breeze it raced up the mountain slope and was only extinguished by the most desperate kind of fire fighting. It did heavy damage to the Government's standing timber and burned up entirely the little trees that would have made a second crop; it blackened and scarred the whole mountain side and destroyed its recreation value for many years; and it cost the Government thousands of dollars--a hundred times the amount of money that Owl was paid--for fighting it. But why should that worry an Indian in need of a prime essential of life like gambling money? And as time went on and nothing seemed to happen on account of it, he ceased to fear that he would be found out.

Search by the Forest Rangers, however, located the exact spot where the fire started, and here they found tracks of a person with a dragging walk, wearing about a No. 5 shoe, who had zigzagged suspiciously through the brush without any apparent destination. This was a starting clue; but it took long work for the Government sleuths to build up the facts to a point which made positive proof--more cost to be charged to providing this Owl with a little gambling stake. But the only way to stop wilful setting of fires is to make it certain that such activity will be discovered and punished, no matter how long it takes. Finally, on July 12th of this year, Chief Investigator Brereton returned to that country with the case so thoroughly worked out that after it had been explained to the Indian, through the interpreter, he made a confession of the whole affair. The jail sentence imposed upon him by the Federal Court will not pay for the damage which he did, but it is safe to say that both he and others who might be tempted to set fire to the woods will in future hesitate a long time before they again stir up the long arm of Uncle Sam.

District 6 - North Pacific District

Sylvester Scritsmeier and a Japanese, whose name is unknown, were burned to death August 10, while fighting fire in a narrow ravine in Chumstick Valley, in the vicinity of Wenatchee National Forest.

When the Woolgrowers' Association, of Klamath County, Oreg., recently found one of its members guilty of trespass against a cattleman, it demonstrated the possibility of sheepmen and cattlemen settling their differences between themselves, through their associations, which leaders of both factions had declared could not be done. The Woolgrowers' constitution gives the directors power to punish any member guilty of trespass, and it was under this provision that the Cattlemen's Association filed its complaint. At the hearing the Woolgrowers' Association acted through its directors and was represented by its attorney; the attorney for the Cattlemen's Association appeared for the complainant, and the defendant was represented by his personal attorney. He was found guilty and paid the complainant $125 damages. This demonstration is gratifying to the friends of both industries, who have long contended that it would be possible for sheepmen and cattlemen to get together in such a way.

District 6 - North Pacific District (Cont.)

A strange disease has attacked the trout of the Bonneville hatchery, adjacent to Oregon National Forest. A funguslike growth seems to be eating away their tails. While the cause of the disease is unknown, it is feared that the waters which supply the hatchery are so warm as to weaken the young fish and make them easy prey. The inspecting committee may recommend the removal of the trout to a hatchery fed by a cooler stream than Tanner Creek, which supplies the trout at Bonneville.

Logging Engineer W. T. Andrews has resigned, effective September 15. Mr. Andrews, who has been the mainstay of timber appraisal work in District 6 for a number of years, has accepted the job of valuation engineer under D. T. Mason, in the Internal Revenue office. The territory assigned to him is the Douglas fir region of western Washington and Oregon. His Service friends hope to see him off and on, and will miss him greatly as an active associate.

The Ochoco timber survey project, under Field Assistant E. A. Hartley, was completed the last of August. Forty-one thousand acres were covered by this party, about one-half private land surveyed under a cooperative agreement with the Oregon and Western Colonization Company. The Olympic survey party, under Forest Examiner A. A. Griffin, will close its season's work September 6, having completed the somewhat reduced Soleduck project. This leaves in the field the Row River party, under Forest Examiner C.J. Conover, and the Tumalo party, under Forest Ranger G. W. Hult, each with a small crew which it has been impossible to recruit to full strength owing to inability to hire and hold qualified cruisers and compass men.

The Douglas fir density rule was adopted by the West Coast Lumber Manufacturers' Association, at their last meeting, held in Portland August 29.

James Ross, a sheep herder, was arrested by a Forest officer for leaving a fire unextinguished on the Wenaha, taken to County Judge Marsh at Pendleton, and fined $25.

The Bellingham-Mount Vernon electric line crosses Clayton Bay on a trestle four miles long. The waters of the bay are salt and swarm with limnoria, which cause rapid destruction to the piling. The railroad company has just undertaken to treat 8,000 piles by coating them with cement shot on with a cement gun. Twenty-five hundred have already been so treated, and the engineer in charge believes this will be an effective remedy for the preservation of the piling.

District 7 - Eastern District

Forest Examiner W. F. Hill has just arrived on the Florida Forest for the purpose of spending several weeks on land exchange work. Mr. Hill was for several years Deputy Supervisor on the Forest, and during that time was engaged largely in Lands work. He is therefore especially well fitted to aid in the exchange cases. On account of several large land owners signifying their desire to take advantage of the opportunity offered by the exchange policy to obtain certain areas of Goverment land, the activity has become a very important one on the Forest. The work promises to result in great benefit by making it possible to change the Forest from one of the most heavily alienated to one of the most compact.

Advertisement has appeared covering the sale of several Navy seaplanes at the Pensacola Naval Air Station. This is a tempting offer to the Supervisor of the Florida, who is looking forward to the day when seaplanes will be used in administrative and protective work. Three of the four ranger stations on the Western Division of the Forest are located on deep water. From a plane flying continuously over water the whole division is easily discernible. Fire patrol and travel between points on the Forest are the main purposes which a flying boat could serve.

The Florida Forest is just coming in for its share of the very high prices that have long prevailed for all raw products except naval stores. The one important source of revenue for the Forest is through the leasing of longleaf pine timber to be worked for the production of turpentine and rosin. During the past few weeks spirits of turpentine have advanced from 90 cents a gallon to $1.70, and medium-grade rosin from $12.25 a barrel to $19.75. Needless to say there is a very strong demand for the 100,000 cups, which, in accordance with the Forest working plan can be leased for next season. Competition for this cuppage is expected to result in some fancy prices. It is probable that the Government will receive an average of 25 cents per tree for the three-year turpentining privilege.

Forest officers on the Florida Forest are being afforded the pleasure of traveling over 12 or 14 miles of the Crestview-Camp Walton road. This is a $90,000 Federal Aid project and is about one-half complete at this time. Under the direction of the Office of Public Roads, a good sand-clay thoroughfare is being built. Approximately 22 miles of the total 28 miles will be within the Forest. Already travel to Camp Walton, the summer resort on Choctawhatchee Bay south of the Forest has increased to such an extent that during the height of the present season it was altogether impossible to offer accommodations for all who wished to spend their vacations at this popular place.

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WEEKLY BULLETIN

Forest Service - Washington Office

(Not for publication)

September 22, 1919.

Tri-state Forestry Conference

A Tri-state Forestry conference will be held at Indianapolis, Indiana, on October 22 and 23, under the auspices of the Department of Conservation of Indiana. Representatives from Indiana, Ohio, Illinois, and the U. S. Forest Service will be present. It is expected that the governors of the three States will attend.

Special invitations to wood users throughout America have been issued and a general invitation is being extended through the press. A strenuous effort is being made to interest wood users because their views and their needs are matters of deep interest to the forestry departments of the three States and to the national organization, and it is from them that the most helpful information looking toward legislation may be obtained.

The timber problems of the three States are similar and interlocking and it is for this reason that the three States have been grouped for the conference. If the timber supply for the future is to be assured, then the wood-using industries of the States must organize to combat the devastating influences which are now at work.

Lumber Committee Meets at Chicago

On October 10 there will be a meeting at Chicago of the special committee authorized by the National Lumber Congress, at its meeting last April, at which Col. Graves made an address on the need of a program of private forestry. Col. Graves has been invited to meet with the committee.

Fire Dodging

"How did it happen, Jim?"

"It was about like this," said Jim, hesitatingly. "On the 19th day of August we were in the Oxford Ranger District near the Bungalow Station on the North Fork of Clearwater River. We had three bad fires in that region - the Elk Mountain fire, the Larson Creek fire, and the Sheep Mountain Ridge fire. It had been very smoky for several days, and you could get no view of the surrounding country at all. You couldn't see a timbered ridge a quarter of a mile away; but on the morning of the 19th it was clear and bright. From my experience with previous fires I knew the stage was well set for bad crown fires that day, but I sought to make the best of this one opportunity to get out and scout the country, and find a good location for a new camp on Sheep Mountain Ridge.

I left camp about 11:00 a. m., after starting a crew with pack train and equipment to establish a new camp about 2 miles east of Elk Mountain. I had gone only about a mile and a half from the Bungalow Station when I noticed a big cloud of smoke beginning to roll up from the Elk Mountain fire up the River; so decided the best thing to do was to hurry down the River to an old burn before I got cut off. I negotiated a little bend in the trail which enabled me to get a good view down the River, when my eye caught a massive cloud of smoke several miles down the stream which seemed to be coming my way. After watching the smoke for a few seconds, its action indicated that the fire was being driven by a terrific wind of cyclonic character; so yielding to the universal axiom that 'self-preservation is the first law of nature' I decided the only thing for me to do was to hit for the River."

"What did you decide to do when you got to the River?"

After thinking soberly for a minute, Jim replied: "I don't know just how to describe that River."

It doubtless meant to Jim, safety first, safety last, and the last possible bridge between Jim and his Creator.

"It happened to be a sharp bend in the River where it courses through canyonlike walls about 12 or 15 feet high with a large rock projecting out over the stream. Below this bend the wind was blowing the fire up the river and above me the wind was blowing the fire down the river, so I concluded that under this rock was the best place for me to camp. I first sat down on the rock to watch the progress of the fire. It must have been driven by a 40-mile wind, which was starting spot fires at least one-half mile ahead of the main fire. The fire coming up the river seemed to become more wild the closer it got to me, and in some freakish manner completely jumped a small basin about a mile wide, between two low ridges. The fire coming down the river first commanded my attention by a cloud of black gaseous smoke which nearly put me out of business. The gas filled my lungs and completely shut off my respiration. It only lasted for a few seconds, but that was long enough, and the process was not repeated before I had taken stock of myself and concluded precautions were now in order, and so climbed down to the river bank and built a rock wall about 4 feet high extending out in the stream a short distance.

The fire coming down the river seemed to lose force after crossing the ridge above me, but the fire coming up the river gained momentum, and it was only a second until the whole world seemed to be on fire. I got down behind the wall I had built, and had my submergible apparatus all ready when the fire went over me. It probably did not last longer than 15 minutes, but it seemed ages to me. During about 5 minutes of this time, the sky was as dark as a dungeon; but except in my erratic imagination, I do not believe I was in any great danger at any time. There always seems to be fresh air just at the surface of the water, and with the use of a moistened handkerchief, I do not believe anyone would have particular difficulty from smoky or gaseous atmosphere. The temperature of the water was not immediately affected, but became noticeably warmer in a short while after the fire passed over - not so much from the heat of the fire as from the hot boulders and burning logs which rolled into the river.

During the procession of the fire trees 2 to 3 feet in diameter would be uprooted and tossed about like matches. And at times the fire would strike the river, raising great sheets of water, and filling the surrounding atmosphere with spray.

I was at this point on the river from about 1 o'clock until 6:30 the next morning, not because of the heat from the fire, but because of the danger from falling trees and rolling boulders."

When questioned as to whether or not he had any witnesses to all this "fire" story, Jim said: "The only witnesses were squirrels, chipmunks, mink and martin, which filed past me in greater numbers than you would expect from the liberated menagerie of the Barnum & Bailey circus, sputtering and chattering in a language unintelligible to smart people. They all seemed to be running from the upper fire toward the lower one which was coming up the river. I thought: 'You fellows are crazier than I am,' but it subsequently developed that they evidently congregated in that little basin that the fire jumped, and all of them came through without a singe. Probably if I had displayed the supersense that they did, and had gone a mile or so farther down the river, I would have escaped the hazard completely."

It later developed that Jim was not the only one who was forced to "take to the water" that day, for there were 16 men in the river at the North Fork bridge, and one man in the river above them. The crew at the Elk Mountain Camp happened to be camped in a bare tract of a few acres, and saved themselves by playing "hide and seek" as the wind veered around the big boulders in the area, while the fire was in their neighborhood. Aside from badly inflamed eyes and nostrils, they came through O.K.

Ranger Examination

The ranger examination will be held on October 27. Forest officers are requested to give all possible publicity to this date. Detailed information is obtainable from the Forest Supervisors, each of whom will receive direct the official announcements issued by the U. S. Civil Service Commission.

Plywood vs. Veneer

The term "plywood" refers to the combination of two or more sheets of veneer glued together so that the sheets cross at an angle. This angle is usually 90 degrees, but not necessarily so great.

"Veneer" refers to the individual unglued sheets of thin board.

The above is a decision recently reached at a conference of the various members of Timber Mechanics and Preservation in an effort to standardize the terminology.

Trout and Bear Breakfast Tendered National Editors

The citizens of Portland, Oregon, under the auspices of the Forest Service, tendered to the National Editorial Association, at Eagle Creek Camp Grounds, on August 10, a breakfast which is described with some natural pride, as follows:

> Some of us feared that the lady National Editors might not have an appetite for bear meat for their breakfast at the Eagle Creek Camp Grounds on August 10, but we reckoned without the two hour drive over America's most scenic highway. If there is any time when these ladies can't eat bear meat it must be when they are asleep. The menu for the breakfast tells only a very small part of the story:

MENU

Cantaloupe

Shredded Wheat with Peaches and Cream

Coffee

Doughnuts

MOUNTAIN TROUT AND BEAR

Potato Chips

Rolls and Butter

Many of the National Editors told us that in all their long trip across the continent, beginning July 26 and taking them through the Canadian Rockies and several of our own National Parks, they had not seen any place which appealed to them as did the Eagle Creek Camp Grounds.

One eastern editor said that what impressed him most about the breakfast was that over 500 people could be served a meal way out in the woods 40 miles from the source of supplies without a hitch or slightest delay. He said - "When I think of the delay usual at banquets which I have attended in large hotels, with professional caterers' services, it seems scarcely possible that such a large crowd could be served where the work had all to be done out of doors on camp stoves." Well, the whole affair was perfectly organized, a committee of 50 from the Progressive Business Men's Club of Portland under Captain Jacob Kanzler, camped at the Grounds the night before and rehearsed songs written for the occasion and stunts, and planned out their part of the performance to a gnat's eye. Two big bears were put on to barbecue at midnight. The Rotary Club of Portland brought the Editors out in 100 automobiles, to the Camp Grounds over the Columbia River Highway, forty five miles from Portland. When they arrived at the parking grounds they were exclaiming over the wonders of the drive. Some were most impressed with the view of the mountains and the river from Crown Point, others with Multnomah Falls or Oneonta Gorge, while others were just boosting the Columbia River Highway in general. However, when they climbed out of the machines and walked over to the entrance to the Camp Grounds, where they could see the long tables under the alder trees, winding away up the bank of the creek for a thousand feet, trimmed with ferns and flowers and set with cantaloupe and peaches and cream and nine hundred rainbow trout simmering on the camp stoves, they forgot all

Trout and Bear Breakfast Tendered National Editors (Cont.)

about America's most scenic highway and there arose a mighty shout of "Ohs" and "Ahs" and there was a mad rush for the tables. The waiters in snow white coats and aprons and chef's caps, struck up a song "Papa is an Editor." Things went so smoothly that the waiters had plenty of time to pull off a strike during breakfast, in sympathy with the "poor working girl" to song accompaniment. The Master Fish Warden of Oregon, R. E. Clanton, was head chef with assistant cooks from the committee of fifty.

The conception of a National Forest, held by most of the Editors, before the Eagle Creek breakfast, was something hazily between a huge cow run and a logging camp. They left with a fixed conviction that a National Forest is a playground paradise to which the high cost of living has not penetrated and where the delights of mountain and stream come down to meet a hard surface pavement in a most unaccountable manner.

Timber Used on Farms

The Bureau of Crop Estimates of the Department of Agriculture is now planning to include among its projects one on forest crops. The plans cover the securing of statistics on all products of forest and farm woodlands. The objects are to furnish dependable and timely estimates concerning these crops in the following connections:

1. The United States.
2. Each State.
3. Each County.
4. Areas set with trees.
5. Areas from which trees are removed by cutting, by fires, and other causes.
6. Areas newly set with trees.
7. Percentage of a full stand.
8. Percentage suitable for cutting for different purposes.
9. Percentage of varieties of commercial importance.
10. Percentage of growth.
11. Damage or loss from insect pests and plant diseases.
12. Total production or cut.
13. Commercial production, or quantities sold.
14. Quantities consumed or utilized on farms.
15. Prices received by owners.
16. Foreign situation.

Is the Sheepherder a Heartless Man?

To the average westerner (aside from the flockmaster) it seems that all the derogatory things that can be said of a human being have been vented upon the sheepherder. He has been described in journalistic gymnastics as "a lonely man - homeless, wifeless, cookless, and too often perchance boozeless." Even the New Testament narrative lays it to his account that "The hireling fleeth because he is an hireling and careth not for the sheep."

Not so does C. N. Whitney, of District 1, speak of a sheepherder who reported to his fire camp after having lost by fire nearly 800 head out of his band of 1,000 sheep. Riding the only horse left of his two - one having been caught by the fire - with swollen, inflamed eyes, scorched clothing, and hands badly burned from knocking firebrands from the backs of his woolly charges, carrying in a gunny sack a family of six little puppies, followed by their mother sore-footed from her many contacts with burning embers and hot ashes, with a face greasy and grim yet sparkling with a beam of heroism, he related a story of adventure which should make even the heart of the hardened cowhand soften toward this tender of the flocks. For several days he had tried desperately so to guide his little flock that they would dodge the flames, but because of the smoke-laden atmosphere he would only emerge from

Is the Sheepherder A Heartless Man? (Cont.)

one fire to become entrapped by another. When finally drawn into close qyarters, he became badly burned while knocking the firebrands from the wool of his sheep. He reported that never in his life had he seen sheep travel so well as when hard pressed by the fire, but if dogged much they would frequently jump into a burned area; when the hot ashes began to scorch their feet they would lie down, their wool would quickly ignite, and it was soon all over with them.

He told with great tenderness of the many times he thought he would have to smother the puppies to avoid their meeting a more tragic death, and it could be easily seen that it was with a feeling of personal pride that he was able to carry them out in the gunny sack.

After a good washup and feed at the fire camp, he packed a lunch for his family (the puppies), sent a telephone message to his boss, and returned to take care of the 290 head of sheep that survived the fire, of which he expected that at least 40 would die.

The Spruce Budworm

The spruce budworm, which has within the last few years killed a great deal of balsam fir timber in Maine and New Brunswick, and worked destruction to a lesser extent in Quebec and northern New Hampshire, is described in a recent issue of the Canadian Forestry Journal.

The article, which is by a Canadian official, states that the activities of this insect have been most evident upon balsam fir, but that it has done some damage to spruce and has occasionally attacked hemlock. It is described as having been on the rampage for five years on the New Brunswick Forest and is at last decreasing in numbers, after having killed a very large proportion of the fir trees that are over twenty years of age, overlooking the younger trees whose tops are still in partial shade, because the moths dislike laying eggs on trees whose tops do not pass through the forest roof. Neither has it affected very much any of the three species of spruce occurring in the province, so that while the damage done has been exceedingly heavy, it has fortunately been confined almost wholly to fir of merchantable size.

According to this authority, the insect is not new to the continent, but is a native and probably occurred in New Brusnwick for centuries before Champlain discovered the Saint John River in 1604. There are actual records of the outbreaks of this insect in the State of Maine and probably also in New Brunswick during the past 110 years. "If history repeats itself," says the Canadian official, "we are due to have another outbreak in twenty or thirty years, and judging from the preponderance of fir in the present reproduction, the next outbreak is likely to be far more serious than any of its predecessors. Moreover, another outbreak seems inevitable unless active measures are taken to prevent it."

A means of prevention of recurrence is described as follows: "A study of conditions in the New Brusnwick Forest during the present outbreak has brought out the fact that the budworm has gained no foothold in areas where the balsam fir exists in the primeval condition of a mixed growth. Another outbreak would evidently be prevented by so arranging cutting operations as to prevent the formation of solid stands of fir. Just how feasible it will be to prevent the undue production of fir is not yet clear. The problem, however, is one that merits the most ernest consideration of those actually controlling the cutting operations, and upon its successful solution depends in no small measure the future success of the lumber industry in this province."

Help From the Forest Service

The facilities of the Forest Products Laboratory have been put to use by the Rhinelander Paper Company, Rhinelander, Wisconsin, with results which they state as follows, in a recent bulletin of the News Print Service Bureau:

Help from the Forest Service (Cont.)

"We beg to advise that we sent a representative to Madison to have cases and frames tested in which we export our paper, and we found through testing same there that by very few small changes, which will cut down our cost also, we can increase the strength of our cases practically 600 per cent."

India's Resources in Paper Making

The production of pulp from bamboos and elephant grass is receiving consideration by foresters of the Indian Service, as is set forth in a recent newspaper:

During the past few years the question of obtaining paper pulp from the bamboos and elephant grasses which are so plentiful has received a good deal of attention, both from the economic department of the government and from the trades affected. Sufficient progress had been made before the war to warrant a proposal to set up an experimental pulping mill for the manufacture of bamboo pulp, but during the war it was, of course, impossible to obtain the necessary machinery. Now that things are reverting a little more nearly to the normal, two of the leading firms in Calcutta are arranging to produce bamboo pulp on a commercial scale, and it is hoped that this enterprise will incidentally procure a continuance of the prosperity of the Titaghur paper mill, which has been making gigantic profits, and piling up large reserves during the war period.

Still in Experimental Stage

The production of paper from grass is still in the experimental stage. The possibilities in this direction from the chemist's point of view were discussed some years ago by Mr. Raitt, but, as is observed in a note just issued by Mr. R. S. Pearson, of the Forest Research Institute and College, Dehra Dun, "such inquiries cannot be considered complete without a consideration of the closely associated questions of total available outturn, yield per acre, cost of extraction to a possible factory, site, local conditions, lines of communication, labor, etc." Mr. Pearson has, in fact, been conducting experiments on these lines, and he now makes public the results which have so far been attained.

"An extensive grass area was found to exist," he writes, "in the angle made by the Brahmaputra and Monas rivers, on the east bank of the former, opposite Goalpara. . . . The grass in this area is estimated to cover some 15,800 acres, while a similar area exists on the south bank of the Brahmaputra below Goalpara. The most important species of grass found in these areas are Khagra (Saccharum spontaneum) and Batta (Saccharum narenga) with patches of Nal (Phragenites karka) on the more swampy ground. Sample plots were taken to determine the outturn per acre, in order to obtain an approximate estimate of the annual yield. The grass was cut over a given area, and weighed green and again when dry, from which it was ascertained that Khagra yielded 7.8, Batta 3.5, and Nal 8.04 tons per acre of dry grass.

It would not be possible to crop the same areas annually, and Mr. Hole, the forest botanist, who has for years studied these grasses to determine their mode of growth, states that Khagra and Nal can be cropped every other year and Batta every third year. By adopting this rotation there is obtainable in round figures a sustained annual yield of 4 tons for Khagra and Nal and 1 ton for Batta. Khagra is found over a greater extent of the area than the other two species, so that were an average to be struck, based on actual areas covered by these three species, this average would probably work out to over 3 tons per acre; for safety's sake it is assumed that all three species occur in equal quantities, and under such an assumption we may expect to get a sustained yield of 3 tons per acre per annum, or a gross annual yield of 47,400 tons per area of dry grass, which, put at a low yield of 33 per cent of pulp, gives over 10,000 tons of pulp per annum.

India's Resources in Paper Making (Cont.)

Working Costs

"The cost of extracting a ton of air-dried grass to a possible factory site at Jogigopa, a small tahsil town in the Bijul estate, just below the junction of the Brahmaputra and the Monas rivers, worked out as follows:

Khagra, per ton	Rs. 7-8
Batta, per ton	Rs. 6-2
Nal, per ton	Rs. 6-8

"Hand samples of the above grasses were sent to England to be tested on a laboratory scale, while several tons were sent to an Indian paper mill to be made into paper. The results were satisfactory, and proved that a very fair quality of paper can be produced from these grasses at a relatively low price.

"It may be remarked that the Monas area was dealt with first by reason of its relative proximity to markets, and sources of labor, and it may be superfluous to add that there are other very extensive and doubtless suitable areas in the Brahmaputra Valley and throughout Burma which have not yet been examined."

Washington Notes

Major C. M. Granger dropped in on us at the Atlantic Building recently to tell us that he will be back on the job at Denver as Assistant District Forester in Silviculture by September 25.

With deep regret announcement is made of the death of W. Leonard Brady, in Washington, D. C., on September 21, 1919. Mr. Brady has been a member of the Forest Service for the past ten years, assigned to Acquisition.

Forest Products Laboratory Notes

The paper-tearing testing machine invented by Armin Elmendorf is now practically completed. The difficulty in testing the tearing strength of paper has always been in obtaining a constant force value. Irregularities in the paper structure due to its fibrous nature make the reading of the force required to tear the paper very uncertain. The machine now under construction overcomes this difficulty by yielding an average force for the entire tear. The instrument simply measures the work done in tearing a strip. Dividing the work done by the length of the tear gives the average tearing force. The length of the tear is the same in all cases, so that the machine may be calibrated to read average tearing force.

District 1 - Northern District

Scores of sheep have been drowned on the Deerlodge Forest on account of the low water. This strange occurrence is due to the low water stage at the head of Little Basin Creek, and the explanation for the loss of the sheep is to be found in the fact that the stream proper is practically dry. Water has, however, gathered in many old prospect holes in the streambed. As the sheep are unable to get water except at these holes they crowd in and are unable to get out again.

In the Big Whitetail Park many head of fine cattle have been lost. In normal years the greater part of the Park is covered with water, but this year the water is largely in the streams draining the Park, which are, in fact, narrow, deep ditches, with occasional large holes. The depth of the ditches makes it difficult for stock to get water and the cattle get into th holes, where they mire down and drown.

District 1 - Northern District

About 5,500 men were hired during the fire season by the Forest Service at the Spokane office, in charge of F. R. Ingalsbe.

Fraser of District Two is assisting in the wind-up of the work in Spokane.

Glen A. Smith is now on the job at Libby as Forest Supervisor.

District 2 - Rocky Mountain District

The extreme drought in the northern part of the District has resulted in unheard of prices for hay and grain and is making an abnormal drain on the Supervisors' allotments for purchase of forage, which a number have already indicated it is impossible to meet. When the estimates were made last fall, it was figured that the top had been reached in forage prices. Present prices in many localities are 100 per cent over those on which the estimates were based. There was no contingent in the District after present year allotments were made, and it has not yet been figured out just how this extra expense is to be met.

Mr. Yokum, Associate Editor of the "Farm and Fireside" magazine, arrived in Denver on the 13th and went immediately to the Leadville Forest to study erosion conditions resulting from denuding some watersheds on the southern portion of the Forest many years ago. Mr. Yokum also plans to visit the Arapaho Forest to study the timber sale methods, and the Pike Forest to study our methods of fire prevention. Mr. Yokum plans to spend about two weeks on the Pike Forest gathering material for use in a magazine.

Supervisor Gordon Parker, who has been on leave for several months in the East, will not return to duty, but has accepted the position of Professor of Forestry at Colorado College, Colorado Springs. The college has charge of several thousand acres of timberland and formerly had a school in connection with the college in this area. During the last two years there has been no occupant of the Chair of Forestry. It is proposed to reopen the school, and Parker's selection ought to insure good results if proper financial support is given him.

District 3 - Southwestern District

Supervisor Mullen claims for the Manzano the record of the biggest tree - a Douglas fir measuring 22 feet, 7 inches in circumference. All doubt as to accuracy is removed because of the precautions taken by Supervisor Mullen in having the measurements made in the presence of a galaxy of Forest officers.

This means that the claim for distinction of the Gila Forest by reporting a Douglas fir 13 feet, 5 inches in circumference, and the Tonto Forest by a tree of 18 feet, 5 inches in circumference, are without avail.

Ranger Johnson of the Santa Fe gives the following observations on the growth of mountain trout in Stewart Lake:

1916 - - - - - fry
1917 - - - - - 6" - 7"
1918 - - - - - 8" - 10"
1919 - - - - -12" - 14"

The above measurements, covering the first three years, are confirmed by Ranger Dwire of the Carson in a planting made in Blue Lake in 1917.

The Forest Products Laboratory has informed this office that they will furnish us with 50 pieces of plywood composed of three thicknesses of hardwoods glued to form a board approximately a quarter of an inch in thickness. We plan to use these for road and trail signs and they will be given a trial on several Forests next year. The glue which will be used is the same that has been used during the war in airplane construction and is absolutely waterproof. The size and weight of the board as compared with the present material we use for signs will obviously be of great value for signs that have to be packed long distances.

Ranger Fred W. Croxen was instrumental in getting Gabriel Baltaesleque, a Basque sheepherder, to confess to the killing of an antelope on the Coconino. It cost Baltaesleque $100 plus a six months' suspended jail sentence.

Report was made to Ranger Croxen of the finding of an antelope hide at an abandoned sheep camp. Croxen on further search found the head, one foot, and a piece of the meat. With the help of a deputy sheriff a search was made for the occupants of the camp, with the result indicated above.

Deputy Supervisor Sizer of the Tonto Forest has this to say in regard to the Government Employees' Mutual Relief Association:

"To be or not to be a member of the Government Mutual Relief Association appears to be a question with many. The influenza epidemic of 1918, to my mind, demonstrated pretty well the benefits to be derived from such insurance. I was one of the victims of the influenza and forwarded receipted bills covering the cost of medicine, doctor bills and nurse hire to the Association with my claim for reimbursement which was paid promptly in the sum of $111.40. Did it help? I should say so!

We have all contributed at various times toward a fund for the relief of some fellow mortal and few of us can be certain that we will not some day be the one in need of help, so why not begin now and help others to help you by helping yourself? It is the cheapest and best insurance that I know. It only costs $1 a month and is cheap at double the price. THINK IT OVER."

"Three members of the Forest force joined the Government Employees' Mutual Relief Association within the last two months. Keep up the good work until we have one hundred per cent membership. We are approaching the mark now." - Prescott Monthly Bulletin.

A great lion and bear hunt is under way on the Black Range of the Datil Forest. J. S. Ligon of the Biological Survey, accompanied by a number of his best hunters and with a pack of 18 trained dogs, started on the roundup several weeks ago. The hunters have bagged nine lions, eight bears, two lobos, and many bobcats.

District 4 - Intermountain District

Telephone Engineer R. B. Adams has returned to this district from District One. Mr. Adams will install a wireless telephone system at the Idaho State Fair at Boise, and the Utah State Fair at Salt Lake. He is enthusiastic over the good results obtained with the wireless telephone during the fire season in District One and sees a big future for it in Forest Service work.

Forest Supervisor C. A. Mattesson and Ranger Folster, while in the mountains, met with an accident recently. Their team became frightened, ran away, and threw both out of the rig. Mr. Mattesson was dragged about 25 yards and was badly bruised, scratched, and cut. Injuries are painful but not serious, and Supervisor Mattesson expects to be on the job shortly.

District 5 - California District

The Southern California section of the Sierra Club made its annual Labor Day trip to the Cleveland Forest this season.

The members left Los Angeles on August 29 in two big motor busses and were met at Oak Grove by Supervisor Tillotson and Ranger Berg. The party camped here for the night, having been delayed en route. The original plan was to continue to Warners. The next morning they continued to Cuyamaco, stopping en route at Warners for a dip in the plunge.

After leaving the lake a heavy thunder shower so dampened the brush and the enthusiasm of the club members that they did not make the planned trip to the lookout but went direct to Descano where they camped at the Hulburd Grove.

District 5 - California District (Cont.)

On Sunday morning they were guided into the Lagunas by Supervisor Tillotson and Ranger Van Horn. Camp was made at the Laguna Camp Ground and in the afternoon a trip was made to Monument Peak, where a one-sided demonstration of the heliograph was given by William E. Ryan, because Cuyamaca and Los Pinos were in the shade all afternoon, and so unable to answer.

Sunday night the members crowded around the camp fire and spent the time listening to stories. The return trip was made on Labor Day with a 6 a. m. start on a 4 a. m. rising call. The following letter shows how the members of the Club enjoyed the trip:

"Dear Mr. Tillotson:

Just a word to let you know that we arrived safely. The busses arrived in L. A. at 6:00 p.m. and 6:30 p.m., respectively, allowing ample time to catch cars.

We are enthusiastic about the Laguna Mts. and particularly with the generous treatment by the Forest Service.

In the name of the party and of the Sierra Club I wish to thank you.

I trust we shall many times in the future have opportunities to explore and enjoy different sections of the Cleveland Forest.

Sincerely,
Ernest Dawson,
(Sierra Club Tour Leader)."

District 6 - North Pacific District

A fire three miles below Rockdale, on the Snoqualmie, probably caused by a match or cigarette stub thrown from a smoking car of the Milwaukee railroad, proved to be a troublesome fire to control, and spread over considerable area. This is one of the first serious fires on the Snoqualmie along the right of way. While practically all of the green timber has disappeared for miles along the routes of the Northern Pacific and Great Northern railways, which also cross the Snoqualmie on their way through the Cascade Mountains, the Milwaukee still traverses considerable green timber.

Richard McAdams, formerly employed on the Snoqualmie, has been selected as one of the 35 fliers retained in the aviation branch of the Marine Corps.

Two standard lookout houses - one for Pugh Mountain and the other for Pilchuck Mountain - will be erected early next year. The material for the Pugh lookout was packed on horseback 17 miles. It is now moving towards the top of the mountain by easy stages, on an aerial tram along two spans of No. 8 river crossing wire. One span is 1,950 feet long, and the other 2,600 feet. The hauling line is one-eighth inch sash cord used on a windlass. A load of 250 pounds sent over the 2,600 ft. span did not cause any noticeable deflection in the wire. By means of these tram lines the house material will be raised from an elevation of 4,900 feet to 7,150 feet. The Pilchuck house will be stored at timberline, on the mountain, through the winter.

State and Government cruisers are now working on the timber of the Sultan and Pilchuck watersheds, on the Snoqualmie, in preparation for the land exchange between the Government and the State of Washington. It is understood that when this exchange is consummated the land transferred to the State will be allotted to the University of Washington and a portion of it used as a model forest tract by the college of forestry.

District Ranger J. W. Lundin reports that the Denny Creek Camp Grounds, 60 miles east of Seattle, on the Sunset Highway, have been crowded to their capacity with tourists, especially on week-ends and holidays. On several occasions it has been impossible to take care of all the people who desired to use the grounds. More development work will be necessary to prepare and open up new camping places on these grounds to take care of the traveling public.

Forest Service exhibits will be shown at the Washington State Fair, Yakima, Washington, September 15 to 20, and at the Oregon State Fair, at Salem, September 22 to 29. An exhibit will also be made by the Department.

Major Shirley Buck, after spending about two years in the Army, received his discharge at Camp Lewis on August 16 and is now back in District 6 as Forest Inspector, assigned to the Office of Operation.

"The yellow cypress, commonly known as Alaska cedar, is not uncommonly four to five feet in diameter," says Sudworth's "Forest Trees of the Pacific Slope." But a yellow cypress 8 feet, 4½ inches in diameter has been discovered on the Washington Forest, according to Deputy Supervisor Campbell. The giant, which stands on the Middle Fork Nooksack trail to Mount Baker, will be properly placarded as a feature of special interest to Forest travelers.

Ranger Harry Colter, of the Columbia, reports several fires started by friction on the Wind River Lumber Company's sale area, north of Carson, Washington, while yarding cedar logs during the recent hot dry weather. A number of fires was started where these logs were hauled across each other. On the same sale the tail block became misplaced and the cable, instead of passing over the sheave, slid across the block itself, which eventually became hot to such an extent as to start a fire which would undoubtedly have caused serious loss of felled timber had it not been speedily discovered and put out.

Klamath County stockmen are backing a bill which provides for the placing of 250,000 acres in eastern Klamath County, Oregon, under administration of the Forest Service, as a part of the Fremont Forest.

Billy Meadows, Wallowa National Forest, is so badly needed as pasture for cattle that the hundred or more elk that have grazed there since about 1912 must be removed. Final arrangements for their removal were made at a meeting in the Forest Supervisor's office, attended by representatives of the cattlemen's association most interested, by the district game warden for Wallowa and Union counties, officials of the State game commission and of the Forest Service, and by local sportsmen. The game commissioners agreed with the cattlemen that the pasture could not be afforded longer for the elk, - which, however, will probably remain in Wallowa County. Twenty-five are to be placed in a park at the head of Lake Wallowa, one of the "seven wonders" of the Forest and a summer resort of more than local importance. Thirty-five of them will be added to the deer and the few native elk on Bear Creek, near the town of Wallowa. A drift fence will prevent their straying into the town, but they will roam free in the mountains. The watershed of Bear Creek is a game preserve, created by the Forest Service. It is expected that the 35 elk from Billy Meadows will so replenish it that in a few years an open season may be had. The game warden has published a warning against trespass on the Bear Creek preserve, in which he particularly asks for cooperation in protection of the elk. The remainder of the herd (about 60) will be liberated in the vicinity of Billy Meadows pasture. Wallowa County is a natural home of the elk, herds having once roamed wild there.

District 7 - Eastern District

More than 150 Boy Scouts of the Roanoke Council of the Boy Scouts of America spent from one to two weeks at Camp Powhatan on the Natural Bridge Forest, Virginia, during July and August of this year.

Camp Powhatan was established this season and plans are already underway for next summer, when it is hoped to have a larger attendance than during the opening season.

The attractions of the camp were set forth by a special circular. The camp is in the Blue Ridge Mountains about six miles from the Natural Bridge Station. The program called for mountain hiking and all sorts of outdoor exercises. The swimming pool is 55 feet wide and 130 feet long. It cost the boys five dollars per week while in camp.

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WEEKLY BULLETIN

Forest Service - Washington Office

(Not for publication)

September 29, 1919.

Meeting of Western Forestry & Conservation Association

The annual meeting of the Western Forestry and Conservation Association will be held on October 6 and 7 at Portland, Oregon. The program indicates that there will be a busy time ahead for those in attendance. Original discussion will be limited to 15 minutes, with a similar or longer period for general discussion. The subjects are:

Progress of Fire Protection in Logging Operations; Burning of Slashings; Necessary Precaution--George C. Joy and Hugh Henry.

Airplane Patrol--Success of 1919 Season; Possibilities and Probable Saving in Men--R. F. Hammatt and F. A. Elliott.

Centralization in Purchase of Equipment for Northwestern Associations; Possibilities and Method of Handling--W. D. Humiston.

Review of Progress in Fire Fighting and Protection Methods; Possible Improvements; Trend of Work--W. B. Osborne, Jr.

Fire Protection on Crown Grant Lands--D. Roy Cameron, District Inspector for British Columbia.

Recent Amendments to Fire Laws; Explanation of and Benefits Derived--F. E. Pape, C. C. Scott, G. M. Homans, John C. Van Hook, I. H. Nash.

Need for Increased Facilities in Educational Work; Accomplishment of Past; Possibilities in Future--E. T. Allen.

Government Cooperation in Protection Work; Interest of Federal Government and Results Sought--George H. Cecil.

Wardens and Patrolmen; Duties of; Kind of Men Best Suited for Work; Equipment of; Attitude Toward Public--R. H. Rutledge and Huntington Taylor.

Wireless Telephones; Possibilities for Fire Protection--Clay M. Allen.

Forest Fire Report 1919--C. S. Chapman.

Report of Resolutions Committee--W. D. Humiston, Chairman.

Reorganization of Western Forestry & Conservation Association--E. T. Allen.

Discussion of New Revenue Laws Affecting Income Tax and Profits on Lumber Prior to Western Meetings of Maj. Mason, of the United States Internal Revenue Department, Washington, D. C.--Chester D. Moore, West Coast Lumbermen's Association.

National Forestry Program, H. S. Graves, United States Forester--T. T. Munger.

Report of Finance Committee, Western Forestry & Conservation Association.

Fires in California

Forest fires were on the program in California on the Angeles and Santa Barbara Forests last week. Latest reports indicate an improvement in the serious situation because of rather general rains in the fire region.

The Angeles had three large fires, one at San Gabriel, which covered 65,000 acres, a second at Ravena, of 80,000 acres, and a third at Laurel Gulch, the extent of which is not known.

The fire on the Santa Barbara covered about 70,000 acres.

Airplanes from March Field have been brought into play and were used for reconnoitering to determine the progress of the fire. The airplanes used were equipped with wireless telephone outfits and so it was possible to have up-to-the-minute information on the whole situation.

Forest officers from the district office and other Forests were rushed to the fires to serve principally as crew leaders.

Reforestation by Initiative in Massachusetts

For the first time in Massachusetts the initiative and referendum amendment to the State constitution is to be involved in an effort to secure legislation. The Massachusetts Forestry Association has plans underway to bring the problem of reforestation of the lands to the attention of the public by means of the amendment.

The association has been working for 20 years to improve the forests of the State, but the constantly increasing demands for timber and a corresponding rise in values has resulted in the denudation of large areas, until more than a fifth of the State is now in the idle land class.

The initiative petition has been prepared. Its form has been approved by the attorney general, and the initial signatures required by the constitution have been obtained. The petition reads as follows:

"For the purpose of reclaiming a part of the wild and idle lands of the commonwealth by reforestation, the undersigned citizens respectfully petition the general court for the following legislation:

Section 1: The State Forest Commission and its successors are hereby authorized to purchase and hold additional lands, suitable for the production of timber, within the commonwealth, to the extent of 250,000 acres.

Section 2: Said lands shall be purchased within a period of 10 years at a rate not to exceed the maximum price per acre already determined by law for the purchase of such lands, or at such price as the general court may from time to time determine.

Section 3: Said commission and its successors shall proceed to reclaim said lands, by replanting or otherwise, for the purpose of producing timber and protecting the water supply of the commonwealth.

Section 4: This act shall take effect upon its enactment by the general court or approval by the voters."

The first 12 signers are: Charles L. Ayling, Barnstable; Charles W. Eliot, Cambridge; William A. Gallup, North Adams; Levi H. Greenwood, Gardner; Charles H. Keith, Greenfield; Nathaniel T. Kidder, Milton; Horace A. Moses, Russell; Joseph A. Skinner, Holyoke; David A. Walsh, Fitchburg; John W. Weeks, Newton; George W. Wheelwright, Boston; John M. Woods, Somerville.

It remains for the association to obtain 20,000 signatures of registered voters to this petition, before it can be presented to the general court. To do so, committees are being appointed in all the towns and cities and each city or town is given its quota.

Lumber Export to be Prohibited

The exportation of lumber or products of lumber from the United States is to be prohibited for a period of two years under the terms of a bill introduced in the House of Representatives by A. W. Jefferis, member from Nebraska.

Violations of the act are to be punished by fines not to exceed the value of the lumber so exported. The bill was referred to the Committee on the Judiciary.

Afforestation in South Africa

The Weekly Bulletin, Canadian Department of Trade and Commerce, has the following to say:

"The Chief Conservator of Forests for the Union of South Africa has submitted to the Union Parliament a memorandum concerning reports on various afforestation schemes, the execution of which is to be carried out from loan funds. For some years past, he explains, insistent demands have been made by all sections of the community that a comprehensive program of afforestation should be embarked on by the Government. The shortage and high prices of timber which prevailed during the war have accentuated these demands, and therefore the Government, just prior to the introduction of the estimates to parliament in 1918, decided to place $250,000 on the loan vote for this object.

In 1913, the last normal year, the Union imported 17,500,000 cubic feet of timber, worth just short of $5,475,000. Of this nearly 90 per cent was coniferous timber--that is to say, the soft timber derived from the class of trees known as pines, spruces, and firs. With the natural increase in the population, the extension of irrigation and agriculture, and the development of industries and railways, it is not unreasonable to assume that the consumption of timber in 50 years' time will be double what it is at present. That is to say, the Union will use 35,000,000 cubic feet per annum, of which 30,000,000 will be softwood. The natural forest resources of the Union, even if fully developed, are never likely to be able to supply 5 per cent of the softwood requirements of the country, so that the Union, unless it steadily pursues an afforestation policy, will be permanently dependent on other countries for practically all the timber it will need.

In spite of the increasing use of iron, steel, and concrete, the world's consumption of timber is growing apace, and prices are rising. Between 1895 and 1913 the price rose 33 per cent, and as the world becomes more civilized and industrialized the competition for this essential raw material of industry is likely to be accentuated. It is therefore not impossible that economic conditions may bring about a repetition of the shortage of timber that has lately been experienced, but a shortage more permanent in character.

That, in a few words, is how the Union stands. Accordingly, it is only a measure of prudence for the Union to grow timber locally to replace the imported article as far as possible. Some kinds, such as teak, mahogany, and ash, will always have to be imported, but timber of a kind that can replace the bulk of that which now comes from abroad can be, and has been, grown to commercial size, and all that is now wanted is an extension of afforestation on sound lines.

If it is assumed that an acre of plantation will yield 100 cubic feet of timber per annum, it will take 350,000 acres to produce the probable requirements of the country in 50 years' time; 100 feet is a conservative estimate, but as there is more danger of under than over afforestation, it is better to adopt this figure. At present there are only 70,000 acres of Government plantations in the Union, and of these about 20,000 are plantations for special purposes, e. g., 7,000 acres in the Transkei provide hut wattles for natives and at Port Elizabeth 5,000 acres are fuel reserves formed on what was once drift sand. Thus not more than one-seventh of the required area has been planted.

In Great Britain recently a forest commission stated in its report: "Forests are a national necessity; the country must have them, though they yield less than the current rate of interest on the capital involved." An attempt has been made to show forests are a national necessity here, but it is not thought afforestation in this country will prove unprofitable, so that financial consideration should be an inducement rather than a hindrance to the execution of an afforestation program. It is, of course, impossible to forecast exactly what the returns will be, for no one can say what the price of timber may be in 30 to 50 years' time, nor the value of money. However, results already obtained indicate that timber can be grown at a profit. Nineteen acres of pine, sold at Tokai in 1916-17, yielded a gross return of $29 per acre per year, and if the value of thinnings is included, returns reached as high a figure as $58. More recently 169 acres of 30-year-old pine was sold at rates which are expected to give a gross return of $350,000, or $2,070 per acre, equal to approximately $69 per acre per annum. No doubt these returns were inflated on account of war conditions, but an acre of pine may be expected to be worth $750 to $1,250 at 30 to 50 years of age.

In arriving at that figure the value of timber has been placed at $0.25 per cubic foot, and the annual increment has been regarded as 100 cubic feet per acre. If the rate per foot is not realized, there is every probability the increment per acre will be exceeded, for 100 cubic feet is a most conservative estimate. The department has on record yields of 150 feet to over 200 feet per acre per annum."

Positions for Foresters

The position of Assistant Superintendent of Forestry in the territory of Hawaii is open for a forester who has had at least two years of practical experience in forestry in the United States or some tropical country, and who has graduated from a recognized forest school of high standing.

The salary is $2,400 per year, and becomes available as soon as the appointee reports for duty. He must, however, pay his traveling expenses to Honolulu.

This is a new position provided for by the 1919 legislature in line with the policy looking for an expansion of the forest work in Hawaii. The work is of practical nature and deals with forest protection and extension. Further information can be obtained from C. S. Judd, Superintendent of Forestry, Division of Forestry, Honolulu, Hawaii.

The 1919 legislation of Texas made increased appropriation for the forest work in the State and has placed the work on a more firm basis than it has been before. State Forester Siecke is looking for a technical forester for appointment to the position of Assistant State Forester at an initial salary of $2,000, with good chances of substantial advancement in the future.

Prof. J. B. Berry, College of Agriculture, University of Georgia, Athens, is looking for a forester for the position of forestry specialist to do extension work in Georgia in connection with the College of Agriculture. The salary is $1,600, with expenses in the field.

Wild Life Station in Japan

Prof. Tamaji Kawamura of the Imperial University of Japan, recently visited the Roosevelt Wild Life Experiment Station in New York, which is under the supervision of the State College of Forestry, with a view to duplicating this Memorial in Japan, possibly on a more extensive scale.

Forest Industries Questionnaire

Questionnaires were the order of the day during the past two years and the end is not yet. The most recent is that sent to timberland owners by the timber section of the National Resources Subdivision of the Bureau of Internal Revenue of the Treasury Department of the good United States of America.

The pamphlet covers 36 pages and it will require time and patience to fill it out in accordance with its terms. Forest Service timber sale estimates and appraisals fade into insignificance as to intricacies in comparison with this document. The information is called for by the Government to make possible the accurate determination of Federal income taxes based on the taxpayers timberland holdings and interests.

To assist timberland owners in filling out the questionnaires members of the staff will hold conferences at designated places throughout the country.

The names of former members of the Forest Service figure conspicuously in this list, namely, R. C. Hall, E. B. Tanner, Swift Berry, W. T. Andrews.

Christmas Trees

Before long advertisements will make their appearance in the newspapers of this country of the number of days left within which to do Christmas shopping. Then also will come the annual request to the Forest Service for photographs and data as to how the Forest Service has cooperated with communities in getting Christmas trees and the part the National Forests generally play in making available a tree for individual celebration.

A call is therefore made on all Forest officers to send in photographs and other material bearing on the subject, showing what has been done in the past Please do it now for Christmas will be here soon.

American Ash for Denmark

J. L. Bjorner, a hardwood importer, of Copenhagen, is at present in this country trying to locate oak and yellow poplar material suitable for importation into Denmark. According to the trade journal which mentions Mr. Bjorner's trip, during the last five years Danish importers have been importing out from Germany because of their inability to get the material from the United States.

At first the oak from Germany was very satisfactory and met with approval in Denmark because of its soft texture and easy working qualities. Of late, however, green stock and inferior goods have been shipped, and in consequence Mr. Bjorner believes that American oak will again come to its own. Just for the present business is at a standstill in Denmark, but possibly by January 1 conditions will have improved sufficiently for Danish importers to make extensive purchases.

Another Resignation

W. T. Andrews, who for 12 years has been logging engineer in the Forest Service with headquarters at Portland, has resigned to join the experts in the timber section of the bureau of internal revenue under D. T. Mason. Mr. Andrews will be in charge of the Douglas fir and pine regions of Oregon and the Douglas fir region in Washington.

Washington Notes

A pictorial record of the war activities of the Forest Products Laboratory has been received. It consists of a fat volume of photographs with necessary explanatory legends completed by P. R. Hicks.

Dendrologist George B. Sudworth is now in the southwest, going via the Letchworth Park Forest and Arboretum in western New York.

A. F. Hawes, now very busy with wood pulp matters, returned to Washington for a brief stay. Mr. Hawes expects to start on another field trip this week.

Captain John D. Guthrie has shed his regimentals and is again Forest Supervisor. Mr. Guthrie leaves for Albuquerque in a couple of days.

Austin Cary is spending a few days in Washington preparatory to another plunge into the southern pines. Mr. Cary has spent the greater part of the past season on this work.

Assistant Engineer Norcross is back in Washington from a western trip that took him to all districts excepting District 3. Most of his time was put in on field investigations in districts 1 and 6.

Forest Inspector E. C. Carter has returned to Washington from a trip to the western districts. Mr. Carter reports having had a little change in program by getting into the fire fighting game in California.

Assistant Forester Clapp is now in the West on a trip which will take him to most of the districts. Mr. Clapp stopped off at Madison for a few days.

H. P. Burden, who has been with the Forest Service for the past two years, has resigned and will assume the duties of professor in engineering at Tufts College. Mr. Burden rendered valuable service while a member of the Forest Service in advancing the cooperative work with the various Government agencies, particularly in activities affecting the Forest Products Laboratory. We can add the name of Mr. Burden to the growing list of Forest Service employees who find salary attraction outside irresistible in comparison to Forest Service salaries.

Washington Notes (Cont.)

J. Alfred Mitchell, after an absence from Washington since the middle of July on Weeks Law fire inspection in Michigan and Wisconsin, has returned. Mr. Mitchell states that the bad fire season in Michigan was caused by the extensive drouth during the early summer. After a brief respite in town Mr. Mitchell will again hit the trail on similar inspection work in some of the other states.

G. G. Anderson, Assistant to the Forester, is making a swing around the circle. Mr. Anderson made his first stop at Denver, and his itinerary calls for stops at Ogden, Missoula, Portland, San Francisco, and Albuquerque.

Forest Products Laboratory Notes

The Plywood and Drafting section will vacate its quarters on the third floor of the Agricultural Engineering building to make room for the agricultural engineers returning to the university this fall.

The Plywood section moves into the Engineer's room on the main floor. Drafting will share quarters temporarily with the division of Computing.

F. R. Hicks is in the field making an examination of the poles on the line between Warren and Buffalo set by the American Telephone and Telegraph Company. Later Mr. Hicks will inspect ties in the test track of the Baltimore and Ohio Railroad Company near Baltimore.

The density rule for Douglas fir has been adopted by the West Coast Lumber Manufacturers' Association. Mr. Newlin represented the Forest Service in this, and the fullest credit for the work in this connection was given the Forest Products Laboratory and Mr. Newlin.

The laminated-wood articles which the laboratory has been manufacturing experimentally to utilize smaller stock are in practically every instance standing up as well in service as solid wood articles.

The shoe lasts have been through the factories repeatedly, undergoing the most severe usage, and are still serviceable. A last manufacturing company of Boston has expressed the opinion that laminated lasts are bound to come into use.

The laminated hat blocks tried out at the Pantorium are very satisfactory, and another specimen has been made up for their use.

The specimens of bolsters which were made up with laminations carefully jointed just before gluing are standing the weathering tests much better than those first made up and only machine planed. In cooperation with a wagon company at Stoughton, these parts are being built into two wagons for trial. The company has also agreed to try out laminated hubs and poles.

Three of the laminated bats which were made up for use of the laboratory teams have been broken, but the breaks were not in the glue joints and the bats gave just as good service as solid ones.

J. S. Mathewson has gone to Washington on temporary detail to take care of the work previously handled by H. P. Burden, who has resigned from the Forest Service.

District 1 - Northern District

The Forest Service exhibit at the State Fair recently held at Helena, Montana, included models of lookout cabins of a post treating plant, a box testing machine, wood specimens and samples of graded lumber, and a very good herbarium. The nursery at Savenac furnished a number of transplants of different species and some jars of seed. The exhibit was assembled by K. D. Swan, who found himself seriously handicapped on account of the exigencies of the fire season.

District 2 - Rocky Mountain District

The Colorado Livestock Association has been making a special effort during the current season to take up constructive work relating to the livestock interests of this State, and is demonstrating the value a State organization can have when it actively interests itself with State problems, or the State livestock interests.

District 2 - Rocky Mountain District (Cont.)

Its main effort has been centered on the reorganization of the entire State from local associations on up to the State organization on a plan similar to that adopted by the California stockmen. The full results of its efforts cannot yet be determined; but in the 48 years of the existence of the Colorado Livestock Association, it seems to have done more the past few months to get before the public and the stockmen of the State than in all its previous history.

Last year the State of Colorado passed an appropriation bill of $50,000 to be spent in cooperation with the Biological Survey in the destruction of predatory animals. The item was to be placed in Class 1 on the appropriation calendar, but in some way was relegated to Class 5, where it would doubtless never have been reached during the appropriation year. The State Association was instrumental in having it put back in Class 1, thus making the money available for the current year. This action indicates the subjects the State Association is interested in, and its effectiveness.

Acting District Forester Morrell and District Engineer Mendenhall have discussed with the State Highway Commissions of the states in District 2 the major road projects which are to be constructed next year, and very satisfactory results have been obtained.

A contract for the sale of approximately 28 million feet of timber to the Rocky Mountain Lumber Company located on the North Fork of Elk River, in the Routt Forest, has just been approved by the Forester. Stumpage rates are:

$1.60 per M ft. B. M. Lodgepole pine, Engelmann spruce saw timber
.50 per M ft. B. M. for Alpine fir
.75 per M ft. B. M. for dead saw timber
.15 per hundred linear feet for mine props

An executed contract has been received from R. V. Whiteside of Duluth, Minnesota, covering the purchase of approximately 16 million feet of mine timber of jack pine, spruce, and tamarack, 21,000 cords of spruce wood, and 2 million feet of white and Norway pine saw timber on the South Kawishiwi unit within the Superior Forest. Stumpage rates are $5.50 for white pine, $4.50 for Norway pine saw timber, $2 per M ft. for mine timber, and 50¢ per cord for spruce.

District 3 - Southwestern District

John H. Allison, after a year's service in the district on silvicultural plans, has returned to the Minnesota State University forestry school.

The proposed elk hunt on the west end of the Sitgreaves has been called off by State Game Warden Prochoska until further investigation can be made to determine the number of elk to be killed and decision reached as to the location of the proposed elk refuge.

Don Quixote is in danger of losing his unique position in connection with the pranks of the windmill, as indicated by the following press report:

"Report of freak electrical storm at Hackberry Ranger Station, 15 miles north of Roosevelt, occurring simultaneously with the brilliant electrical display here on the night of August 30, has just reached the local weather bureau. According to the report of Don S. Sullivan, ranger at Hackberry, the earth became so charged with electricity, that the negative and positive poles were reversed and the bolts of lightning rose from the ground to the sky, instead of pursuing the ordinary route from sky to ground. With a strong southwest wind blowing, the windmill at the station was seen to turn with the wind at a rapid rate until lightning flashed.

With each bolt of lightning, the mill-wheel stopped with a jerk and was propelled by the force of the electric current in the opposite direction until caught once more by the wind and reversed."

District 4 - Intermountain District

District Forester Kneipp was recently quite set up on securing the following letter, which deals with the efforts in the district to make the recreational facilities available.

"I have just returned from a two months' camping trip in the Sawtooth Mountains and at this time I want to express my appreciation for the good work that has been done for the accommodation of the campers on upper Wood River and at the lakes. I was located at Easley Springs and while I was there more than five hundred cars visited these springs. The campers for miles both up and down the stream came there for their baths and to do their usual family washing. It is regretted that the accommodations there (I mean the plunge) are not better. I have seen a bunch of people sitting on the hillside all afternoon awaiting their turn to take a plunge. I notice at the Russian John Ranger Station register that you invite suggestions. It is my opinion that you could do nothing that would add more real pleasure and comfort than to rebuild the plunge and give the visitors ample bathing facilities.

The road work over Galena is progressing nicely and next year will assure us a safe trip over the hill. There will be more camping at the lakes then but Easley Springs will be the main attraction.

The road you are putting through the camp grounds will open up a much needed space for campers. Late in August there was a party of five carloads came up to spend a week near us but were compelled to go up the stream about a mile as all the grounds were filled. There wasn't a time from July 1st until September 1st that the grounds weren't filled and more would have stopped if there had been room.

People from a good many different states visited Wood River this year and all expressed their appreciation of the work done by the Government for their benefit.

Very truly,
M. MATTSON."

District 5 - California District

Thrills in airplane rides are becoming rather a common occurrence in California, but this does not mean that thrills are at an end. Supervisor Coffman of the California Forest had an experience recently which puts him in the front rank in this respect. A saddle horse took him over the brink of a dangerous bluff and he had a close call. But we will let Supervisor Coffman tell how it happened:

"On the Covelo-Paskenta road there is a sharp turn on the edge of a bluff about 350 to 400 feet above Eel River. There is no guard rail on this turn, neither is the road widened for a turn-out.

Last Saturday, while traveling over this road on my way from the Covelo Ranger Station, just as I rounded this point a rattler, lying against the bank on the inner side of the road, gave warning. Rattlesnakes are about the only objects at which my saddle horse shied; he was aware of the snake before I was and immediately whirled around and toward the outer edge of the road. On account of the pack horse I was leading, there was very little room left along the outer side of the road, and he lost his footing on the ends of some boards which projected from under the roadbed out over the bluff.

The closeness of the pack horse and the binding of the lead rope against my leg as my saddle horse turned prevented my dismounting on the road, and the saddle horse was starting down the bluff before I could get off. As I did so, I slid down the bluff ahead of the horse, but fortunately was able to slide feet first and by clutching at projecting rocks and clumps of vegetation to break my fall. As I looked up at the horse struggling and sliding above me, I thought my time had surely come, for it did not seem possible for me to avoid being crushed under the rolling horse even if I could avoid falling to the bottom myself. Either in clutching at clumps of brush I pulled myself to one side, or else the horse in his struggles to obtain a foothold moved a short distance around the bluff, so that when he plunged past me there was a narrow ledge of rock between us.

I was more than 100 feet below the road before I managed to obtain a foothold. I made my way from there down to the river bed, where I found the horse had been instantly killed by the fall, having landed on his back between two large rocks and had broken his neck.

As soon as I saw that no further attention was needed by the horse, I thought I would at least like to get some revenge by killing the rattler responsible for the accident, so I went up the river to a point where I could climb up to the road, and found my pack horses waiting at the scene of the accident but the rattler had crossed the road and crawled down into the rocks below, so that I was denied the satisfaction of killing it.

I was extremely fortunate in escaping without any injury to myself, and there were even no torn places in my clothing: my shirt sleeves were rolled up above my elbows and I came through with only slight bruises and scratches on my hands and forearms. I recall that as I was sliding down the bluff and grabbing at clumps of brush I noticed it was poison oak I was clutching and thinking that if I came through alive I would probably have more poisoning from that source (and I have).

I now have an additional improvement project on my list, and one which will secure early attention - the widening of the road at this point and the erection of a guard rail. If the county won't do it, either alone or in cooperation with the Service, we will look after it ourselves."

District 6 - North Pacific District

The Western Lumber and Export Company has bought additional stumpage on the Umpqua, adjacent to its original and larger purchase. The second sale is for 2½ million feet, mostly Douglas fir, at $1.25 per thousand feet for Douglas fir and western red cedar and 50 cents per thousand feet for hemlock.

A sale covering 750 M feet of pine at $2 per thousand feet and 70 M feet of Douglas fir at $1 per thousand feet has also been made. This timber is located on the Okanogan, and is to be made into apple boxes.

In a recent sale on the Siuslaw 971 M feet of Douglas fir brought $1.80 per M and 600 M feet of western red cedar brought $1.10 per M.

The Olympic has been credited recently with the sale of 1,000 M feet of western red cedar at $2; and 100 M feet of Douglas fir and western hemlock at $1.25 for the fir and 50 cents for the hemlock.

A most interesting method of exterminating grasshoppers has been suggested by Thomas P. Mackenzie, formerly chief of grazing in District 6 and now grazing commissioner of British Columbia. He would send down poison gas upon the grasshopper armies of invasion,--"a gas heavy enough to lie on the ground but which would not poison forage or stock." He explains that grasshoppers usually collect in low swales and could be killed by concentrating gas in these swales, and points out that experience in France with poison gas has shown that even high power gas does not injure the forest, although it kills aphids. Canada will give Mr. MacKenzie's plan a trial during the coming year.

The Barlow Road, almost entirely in Oregon National Forest, has passed from private to public ownership in a deed, the closing paragraph of which reads:

"To have and to hold unto the said State of Oregon, with all its mountains and hills, its forests and vines, its flowers and shrubs, its valleys and dells, its crags and rocks, its gorges and canyons, its glaciers and snowfields, its rivers and streams, its animals and birds, its tempests and storms, its lights and shadows, its trails and paths, and all the beauties and grandeur of Mount Hood, for the use, benefit, and pleasure of us all, forever."

The transfer was made preliminary to making it a permanent part of the Mount Hood Loop Road. The Old Barlow Road has a historical importance commensurate with its scenic importance, since it is the route by which many of the early pioneers found their way over the Cascades and into the Willamette Valley.

The following is copied from a letter by Charles H. Flory to the District Forester in reference to an allotment for building a planked road into Kake Village, Alaska:

"Kake Village is entirely within the Tongass Forest. It has a population of about 300 inhabitants, exclusively Indian with the exception of a merchant, a missionary, and a United States public-school teacher. The missionary and the school-teacher are encouraging the Indians to stop the practice of living in community houses and to have each family occupy a separate house. They are quite successful in their efforts and the town is expanding rapidly. The planked road is not only necessary to provide communication between the houses already built, but will act as an incentive to the building of more separate residences."

Miss Florence D. Strause and Messrs. Jesse L. Peterson, T. T. Munger, A. G. Jackson, and H. M. White, of the District Office, drew tickets of admission to the President's address in Portland. Thirty-one thousand persons had each a coupon in the revolving wheel which chose the particular 6,000 names whose owners would receive admission tickets.

C. H. Park, supervisor of the Washington, has sent to this office prints of the big Alaska cedar found recently on his Forest. Guard James Wallace, who measured it accurately, says it is 8 feet 4 inches in diameter. This newly found big tree is near Mazama Park.

Three thousand four hundred eighty-eight cords of cedar jam timber on the Washington National Forest is now being advertised for sale at a price of 75 cents per cord. This is cedar driftwood, which is piled up in jams in the side channels and on the river bars along the Skagit River, from the Canadian boundary southward, for a distance of twenty-five miles. This timber was sold a few years ago; but from one cause and another the purchaser failed to complete the contract, and the timber is now being offered again for sale, in the hope that it may be cut into shingle bolts and driven into the river and so salvaged.

National Forest Examiner Matz has just come out of the wilds of the northwestern corner of the Okanogan National Forest after being cut off from all communication for four weeks because of the remoteness and isolation of the region. His mission was to cruise a tract of timber burned two years ago by a fire caused by a sheepman's neglect. Mr. Matz's estimate of the damages will be used as the basis for civil action to recover damages against the trespasser, who has already plead nolo contendere on a criminal charge in the United States Court.

The Umatilla National Forest is just starting its first District Forester's timber sale. Bids were opened September 18 for four million feet of western yellow pine, Douglas fir, and western larch, on Camas Creek. The sale has been awarded to the Teel Irrigation District, which is installing a mill, and will use the timber principally for constructing a flume to transport water from the National Forest to the territory to be irrigated. The advertised price at which the timber was sold is $2 per thousand feet for the yellow pine and 75 cents per thousand feet for the other species. It is the intention to use the larch for the bottom boards of the flume, while the sides will be of pine. Scaler George Donaldson, formerly of the Whitman Forest, will administer the sale.

Aerial photography is to be tried on the Umpqua National Forest as an adjunct to intensive timber reconnaissance. The War Department, through Colonel H. H. Arnold, has consented to detail a De Haviland airplane, with the necessary photographic equipment, to make a flight over the Row River watershed, where a timber survey party is now at work. Forest Assistant Charles Boyce, formerly a lieutenant in the photographic section of the air service, will take a series of photographs from the airplane from which a mosaic map or photograph can be built up. The timber survey party will cover on the ground the more heavily timbered portions of the watershed, and it is thought that the photographs taken from the airplane will greatly simplify their work in sketching the topography and forest types of the more sparsely timbered or open rim of the watershed. It will be an interesting demonstration of the possibilities of locating accurately by means of aerial photographs minor water courses in a heavily timbered country and the distribution of the several forest types. Triangulation points have already been established, which can be determined from the airplane but not seen from the ground in the forest, and from them the mosaic photograph can be oriented.

C. Brandts Buys, forester from Dutch East India, was among the many callers at the District Office during the past week. He is interested in steam logging, particularly under the selection system of cutting, with a view to its application by his home Government, where clean cutting is impracticable because of the excessive rainfall (several hundred inches a year) and because of the large mixture of species, many of which are commercially undesirable. Mr. Buys speaks interestingly of the silvicultural problems in Dutch East India, and of his observations of silviculture in California--especially of what he considers the criminal lack of silviculture in private cuttings in the sugar pine type. Among Mr. Buys' trips in this District will be one to the Wind River Nursery, Experiment Station, and Timber Sale, with Mr. Kumel and Supervisor Brundage.

One of the interesting developments in the management of yellow pine forests of Oregon is the prospect of making sales of naval stores in eastern Oregon. The matter has come up twice within the last week, one of the inquiries resulting in a definite application for permit to place several thousand cups on an area to be selected by this office.

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WEEKLY BULLETIN

Forest Service - Washington Office

(Not for publication)

October 6, 1919.

A POLICY OF FORESTRY FOR THE NATION

By Henry S. Graves

A national policy of forestry seeks the protection and beneficial utilization of our present forest resources, the renewal after cutting of forests on lands not needed for agriculture and settlement, the stability of forest industries and of satisfactory conditions for forest workers, and the restoration of forest growth on lands now unproductive and idle.

The public interests in the continuance of forests justify and require direct ownership of extensive areas, and also participation by the public in working out the problem of protection and renewal of private forests. A program of forestry for the nation should include action by the public through the Government and the states, action by land owners and operators, and the means of uniting the efforts of all for the achievement of a common purpose.

The service of forests is not alone local; it is national as well. For the products are widely distributed without reference to State lines, the industries are engaged in interstate business, and the protective benefits of forests often extend far beyond the localities where they are situated. It is the function of the Federal government to take the leadership in formulating a national economic policy that gives consideration to the relationship of all forests to the industrial life of the country. The central Government alone can bring about concurrent and harmonious action within given regions. Its research and educational work may be directed to the problems of the nation and of regions that comprise more than one State. Representing the whole nation, the Government can stimulate and guide local action where individual states by their own efforts would fail. The Government can act to organize all agencies affected by the forest problem in a united undertaking to inaugurate and carry out a program of forestry.

The states have not only the function of handling the public forests owned by them, but they have also a direct responsibility in the protection and continuance of private forests. In this, the Federal Government should take part to meet interstate and national problems, to stimulate action by the states, and to bring into harmony the efforts of the different states. In the problem of private forestry, the Government would work through and in cooperation with the states. The legislation affecting the private owner in the matter of protection and continuance of forests should be by the states. The Government should help the states in formulating plans and developing methods and by direct assistance in carrying them out. The assistance offered by the Government should be contingent upon the states taking legislative and administrative action to provide for the protection and renewal of their forests.

A national policy must recognize the problems of the private owner of forests. Greater security of forest property from fire, better returns from timberland in the long run, and more stable industrial conditions must be sought. A program in which the public participates and recognizes industrial problems, like taxation, would enable private proprietors to handle their forests in a way not to be a public injury but to serve in building up the localities in which they are situated.

PUBLIC FORESTS

There should be an extensive program of public forests, owned by the Nation, by the states, by municipalities, and, too, by quasi-public institutions and organizations. The public forests today comprise about 25 per cent of the total forest area of the country. They should be extended to include ultimately from 40 to 50 per cent.

In any plan of extensive public holdings, whether Federal or State, provision should be made for returning to the communities a share of the receipts, as is done in case of the National Forests, or otherwise to compensate them for withdrawing the lands from taxation.

The Federal Government should not only provide adequate support properly to protect and develop its forest properties; it should also rehabilitate, by planting if necessary, the depleted and wasted cut-over and burned lands.

(a) National Forests

The Federal holdings should be extended by purchase, by exchange of stumpage for land, and by placing under permanent administration forest lands now in the unreserved public domain.

The program of acquisition should seek two classes of forest land:

1. Areas needed for the protection of water resources, to prevent erosion, for recreation and other general public purposes. These should include both virgin forests and cut-over lands.

2. Cut-over lands, with the purpose of insuring the production of lumber and other products and of establishing demonstration areas and centers for Federal cooperation with states and private owners.

The present Weeks Law program contemplates the purchase of about one million acres in New England and five million acres in the Southern Appalachians. This program should be completed as fast as is compatible with public financial conditions, and should be extended to include other important areas needed for watershed protection and other general public service. Lands acquired for protective purposes as well as those for lumber production should be distributed through all forest regions of the country.

The acquisition of cut-over lands by exchange for stumpage would serve to consolidate and block out the National Forests of the West. This principle has already been recognized in several special laws applicable to certain Forests.

There are still forest lands in the public domain which should be added to the National Forests. There are several million acres of such lands outside of Alaska. The great forests of the interior of Alaska should also be placed under adequate protection and administration.

(b) State Forests

The states should establish public forests, with the same general objectives as the Federal government, and with special reference to the economic and industrial needs within their boundaries. Many western and southern states still own forest lands received from previous grants from the Government; these should be placed under permanent forest administration, with provision for the settlement of areas suited to agriculture. Lands reverting to the states for taxes or otherwise should, where practicable, be retained and used to build up permanent public forest reservations.

(c) Other Public Forests

Every encouragement should be offered to municipalities to establish public forests or woodland parks. These may be necessary to protect the local water supplies, or to serve as public recreation grounds; and in many instances they may yield products that will help in a material way to reduce local taxation for schools or public works. Permanent institutions and organizations of a quasi-public character should also be encouraged to acquire forests and handle them on the basis of continued production.

PRIVATE FORESTS

The safeguarding and perpetuation of forests on private lands are possible through an organized system of protection, through the prohibition of destructive processes that produce waste lands, and through the promotion of constructive and entirely practical measures of forestry. The participation, liberal cooperation, and direction of the public in working out the problems involved are necessary for success.

Fire Protection

The objectives of fire protection are:

1. To prevent destruction and injury to standing timber by fire.
2. To safeguard young growth already established within the older timber and on cut-over lands.
3. To promote natural reproduction so far as this can be done by fire protective measures.

Effective fire protection is achieved only through a joint undertaking between the public and private agencies in which all lands, regardless of ownership, are brought under an organized system. Such a system requires:

1. An effective service for preventing forest fires and detecting and suppressing those which may be started. Such a service already exists in a number of states.
2. Improvements needed for the prompt detection and suppression of fires. These include roads, trails, lookout stations, properly located stations for rangers, bases for airplanes when these are used, and so on.
3. Measures to reduce the inflammability of the forests. These may consist of lopping the tops, as is practiced in parts of the East; or burning the brush in piles as conducted in many pine stands on the National Forests; or burning over at the proper season cleared areas, protected by fire lines, as in heavy Douglas fir stands; or in felling dead snags, as is required in many National Forest timber sales; and in other measures. In some places fire lines may be desirable, as practiced in southern California; or carefully controlled burning at the proper season of strips and selected areas, as is practical in certain open pine forests. Uncontrolled light burning should be prohibited everywhere.
4. A vigorous campaign of education of the public regarding the danger of forest fires and the need of cooperation on the part of every user of the woods.
5. A systematic campaign of law enforcement, in which all citizens should be asked to cooperate, to punish those who by carelessness or intent start fires or permit their spread.

There should be incorporated in the forest laws of every State requirements to bring all forest owners into the protective system, and to extend it to all cut-over and unimproved lands in the State, together with the disposal, by lopping or burning, of dangerous slashings and other special measures that the local conditions may require.

There should be provided by the State the administrative machinery necessary to carry out the work effectively.

The public should share in the burden of protection. The division of cost will necessarily vary in different states, as is now the case among those states which have inaugurated such a system. The public may properly bear the cost of the State-wide patrol system, including overhead, inspection, lookouts, and similar items, and a portion of the fire suppression costs.

In general, the cost of the preventive system should be shared about equally between the public and the owner of the land. At the present time assistance by the states and the efforts of the private owners alike are inadequate. Measures like brush disposal are essentially a part of the logging operation and should be a charge against it.

The Federal Government should grant liberal aid in fire protection, far greater than at present. Its aid should be contingent on the State's inaugurating and carrying out such a system as above described. This financial help should not exceed in amount that appropriated by the State.

Protection Against Insects and Disease

As in fire protection, the spread of dangerous insect infestations and diseases requires the aid and direction of the public. Both the National and State governments should participate and appropriate liberally to check the depredations.

Forest Renewal

The renewal of forests on lands not required for agriculture and settlement is an essential feature of a national policy of forestry and an effective program should be worked out in each State, backed by appropriate legislation and efficient administration, which will achieve this object on private as well as on public property. As in the case of fire protection, forest renewal on private lands requires the participation and aid of the public.

There are two problems of forest renewal; first, the restocking of lands already cut over and now in a condition of waste; and second, that of providing for natural reproduction as the timber is cut. Where there is still seed or seed-bearing trees on cut-over lands, continued fire protection may in many cases suffice for restocking. Where there is no chance for natural reproduction, planting or sowing will be necessary. The public will have to take over a large portion of these lands and restore them to productivity. In many other cases owners may be induced to restock their waste lands as a business undertaking.

Provision for forest renewal should be made at the time of cutting. Sufficient restocking of the average private tract can be accomplished by natural reproduction without resort to planting or other intensive measures. On certain types of forest, forest renewal will result from fire protection alone. In many instances of unrestricted exploitation, however, fire protection alone does not suffice to secure renewal and to prevent the lands becoming waste. If protection alone does not suffice to secure forest reproduction, the owners should be required to adopt such measures as may be necessary to accomplish this, with cooperative aid by the public in working out the problem as a practical undertaking. As in the case of fire protection, the additional measures necessary for forest renewal should be made a part of a systematic program in which the public and private owners engage in a joint undertaking with a common objective.

The first steps in this undertaking are to determine in each region:

1. The circumstances under which fire protection alone will not suffice to prevent wasting of the land under prevailing methods of lumbering.
2. The additional measures necessary to secure conditions favorable for natural renewal.
3. The classes of land upon which forest growth should be continued.
4. The cooperation that should be given by the public to make feasible in practice the measures that may be necessary for the owners to take.
5. The legislation needed to bring these measures into practice, as a part of the State's program of forestry.

As in the case of fire protection, the plan for special measures and for forest renewal should be worked out through State legislation and administration, with the assistance and backing of the Government. The Federal Government should seek to secure concurrent action by the states within given economic regional units, to bring about uniform standards of practice, to conduct experiments and research, to grant material aid in various ways, and to act as a coordinating agent to bring together the different local agencies into full cooperation. The Government should make its assistance to the states contingent upon effective action by the latter.

Measures of forestry upon private lands sought by the proposed program fall into two classes: first, those necessary to prevent the lands becoming waste after lumbering; and second, those which seek a maximum production of timber and other products. The first class of measures should be required on all lands that ought to remain in forest growth. The measures to secure maximum production are of a more intensive character. They should be encouraged in every way but would not be obligatory. They involve a larger initial investment, and they render a larger ultimate return to the owner. Under the second class fall such measures as planting where needed, leaving a larger number of seed trees, cutting in favorable seed years, leaving medium sized trees even though now saleable for a second cut or for cover, various kinds of thinnings of second growth, organization of the forest work on a basis of sustained annual yield, and so on. Experiments should be conducted by the public to establish and make generally known the best practice in each region. Advice by public officers should be freely afforded. Planting stock should be offered at cost by the public. Taxes should be adjusted to encourage owners to undertake the methods found to be most efficient, and other measures of aid given as indicated in the last section of this statement.

Economical Utilization

Every encouragement should be afforded to bring about close utilization of timber in the forest and to prevent losses in the handling and use of the manufactured product. This will be accomplished largely through cooperation and research, in bringing information to the knowledge of operators and users of wood products. It is a problem of investigation and industrial education, in which the public should take the leadership.

ASSISTANCE AND COOPERATION BY THE PUBLIC

In a national policy of forestry the public itself should assume certain responsibilities and it should assume certain burdens. It should cooperate with and assist private owners in carrying out their part of the undertaking. The measures of cooperation fall under the following heads:

1. Fire Protection. As already indicated, the public should directly share the burden of fire protection, especially in a preventive system and in the cost of suppression.
2. Assistance in Forestry. The public should assist owners in working out plans for cutting that will promote natural reproduction, in planting, and in other measures of forestry. The State should offer planting stock at cost and cooperate with the owners in establishing plantations.
3. Taxation. The states should adopt a form of taxation calculated to encourage good forest practice. The present methods of taxation, with their lack of uniformity in application, often tend to promote premature and wasteful cutting and to discourage forest renewal. To promote action by the State, the Federal government should assist the states to investigate the current methods of taxation, their effect in causing premature and wasteful cutting and in increasing the difficulties of holding cut-over lands for tree growth, and should assist in drafting model tax laws applicable to various forest conditions.
4. Forest Loans. Existing legislation concerning farm loans should be extended to include loans for the purchase and improvement of forest lands, to encourage the holding of lands previously acquired, where the purpose of the owner is to hold and protect cut-over lands or those having growing timber, to reforest lands by seeding or planting, or to use other measures in promoting forest production. To obtain the benefit of such loans, which should be for a maximum period of 50 years, the land owner should enter into a specific obligation to retain the land in growing timber and protect and care for it during the life of the loan.
5. A Survey of Forest Resources. Funds should be provided whereby the Federal Government in cooperation with State and private interests may make a survey of the forest resources of the country. This would determine the quantities of timber suitable for different industrial uses, the current consumption of forest products, the probable requirements of the different regions for material, the possible production of the forests by growth to meet these requirements, and other matters which will aid in developing the national forest policy.
6. Land Classification. The public should cooperate in land classification to aid owners to put their lands to the most productive use. The public should aid in bringing settlers upon lands suited to agriculture, discouraging speculative undertakings that lead to the deception of innocent investors and efforts for the colonization of lands unsuited to the purpose. Land classification would indicate the classes of lands which should be devoted to the production of timber, either permanently or pending a development which would make possible their successful settlement.
7. Research Work. Adequate funds should be provided to enable the Government and other public agencies to carry on investigative work needed in carrying out a national policy of forestry. This would include investigations on a larger scale than at present in determining the best methods of forest practice, and also research in forest products.

A program for the nation must be an aggregate of local programs adapted to different conditions, and correlated and standardized through the Federal Government to meet the broader requirements of the whole country. A national program can not be put into effect in its entirety at once. Local programs will also probably have to be worked out by steps. Some states are already able to go forward more rapidly than others, partly because of their financial strength and partly because experience has already demonstrated the methods of protection and forestry required to secure results on the ground.

The initiation of a national policy of forestry requires as one of the first steps the passage of a Federal law that recognizes its objectives and provides authority and means for the Government to extend cooperation with the states in the protection and perpetuation of the forests under their jurisdiction along the foregoing lines. At the same time, Federal appropriations for the purchase of forest lands should be greatly increased.

Much can be accomplished pending such a law. Thus, there should be at once a joining of hands in a most vigorous campaign for fire protection, that will educate the public to the dangers from fire and lead to more effective action in all forest regions. Individual states should go forward with plans for better legislation and larger support of forestry. But the passage of a basic Federal law with the aid that the nation can offer would make possible the inauguration of a policy that would secure results, impossible without such national action.

Assistant Forester Hall Resigns

Assistant Forester William L. Hall has submitted his resignation as a member of the Forest Service to be effective the end of the present month. Mr. Hall has been a member of the Forest Service for twenty years and things will hardly seem right without him on the job. In the early days Mr. Hall was active in the Extension work; later, in charge of Products; then in charge of the Purchase work under the Weeks Law; and during the past year he has been giving most of his time to the Program for Private Forestry launched by Colonel Graves. It is with regret that we see Mr. Hall leaving the Forest Service; but as his new activities will permit him to do much good for forestry we feel that he is still one of us, although not on the payroll.

Mr. Rutledge Appointed District Forester

The Secretary of Agriculture has approved the Forester's recommendation for the appointment of Mr. R. H. Rutledge as District Forester in charge of the Northern District. This is a well earned recognition of faithful service during the unsettled period of the war and good work during the recent extremely bad fire season.

Recent Legislation in Minnesota

The special session of the Minnesota legislature closed last week. The law makers found difficulty in agreeing on a proper method of handling the forest fire patrol system and finally worked out an emergency measure. It creates a State board of relief, consisting of the governor, State auditor, and State treasurer. They are given power to raise funds by certificates of indebtedness up to $500,000 in order to avert calamities or to give relief to sufferers after a calamity has occurred. Under this act it is planned to employ additional forest patrol men at once to be on guard this fall during the dangerous season of October and November.

Four measures included in State Forester Cox's program were enacted into law. One forbids setting of fires in the dangerous area during the summer and fall season, except under permits from foresters. Another requires locomotives to be equipped with spark arresters when used in the forest region.

The other two bills are memorials to Congress asking for increased government appropriation under the Weeks Law to aid states, and for a naval hydro-airplane station at Duluth, from which scout planes can go out to survey the forests and detect incipient fires.

Supervisor Swift's Defi

Since the publication of the original long-service defi, the Editors of the Weekly Bulletin have been flooded with data controverting Supervisor Swift's claim. These data are being compiled and will be published in an early issue.

Meeting Postponed

Announcement is made of the postponement to October 24 of the meeting at Chicago originally called by the National Lumber Manufacturers for October 10, to confer with Colonel Graves on the program for private forestry.

Colonel Arnold Inspects Forest Patrols

Colonel H. H. Arnold, Department Air Service Officer, Western Department, has just made an inspection trip by airplane from San Francisco to the forest patrols in Oregon, and to Camp Lewis, Washington. The trip required five days and Colonel Arnold visited the following places:--Sacramento, Redding, Roseburg, Eugene, Portland, and Camp Lewis. On his return trip he made but two stops, at Eugene, Oregon, and Redding, Calif.

Washington Notes

Roy Headley has increased his line of activities and is now on detail to the reclassification commission. We hope that, in cooperation with Mr. Dana, he will be able to put the Forest Service on the map in every respect.

John D. Jones has gone to the Youngstown Naval Base at the request of the Navy to advise on fire protection measures. It appears that the Navy has a large supply of high explosives stored on an area surrounded by brush and timber growth, along one side of which a railroad is operated. Mr. Jones will look over the situation and draw up plans of protection. We hope that there will not be a fire among the explosives before he gets his plans under way.

S. L. Wolfe is in the South on a three-weeks' tour, engaged in a study of markets, etc.

Forest Products Laboratory Notes

A box-testing drum has been installed recently by the Chicago Mill and Lumber Company, according to an advertisement in "System," which states the installation to be "the most complete, scientific box-testing laboratory in the world." The drum was modeled after the drum designed and set up by the Laboratory experts.

District 1 - Northern District

J. E. Keach has been busy for some time on a logging cost study. So far he has confined his work to time studies of felling, bucking, and skidding in yellow pine. The data obtained will be worked up during the coming winter into curves and tables. It is hoped that it will be possible to determine from this study the relative costs of felling and bucking trees of different dimensions on varying slopes and varying degrees of density of brush and overhead stand. The results of the skidding study are expected to show the relative costs of handling varying diameters of logs, the effect of slope and degrees of defect in logs, as well as the effect of brush, rock, etc. The study will later be extended to other types of forest.

The timber survey crew on Big Creek, Blackfeet Forest, has had a season of odds, mainly personnel. About half of the crew quit on August 15. Some of those quitting were local men whose interest in the job probably did not extend beyond the money in it for them. Three of the men, however, were forestry students from the University of Montana who had entered into an agreement to work this and next year.

Four planting projects are on the fall program. On the Pend Oreille, 450 acres will be planted; on the Cabinet, 350 acres; on the Lolo, 250 acres; and on the St. Joe, 400 acres. One million 3-0 white pine stock will be used.

District 2 - Rocky Mountain District

Seth Bullock, at one time Forest Supervisor of the Black Hills Forest, then known as the Black Hills Forest Reserve and including the Sioux as well, died recently in Deadwood. Mr. Bullock resigned from the Forest Service January 31, 1906, and was appointed U. S. Marshal for South Dakota. During 1910-11-12, Mr. Bullock served as a member of the board of three which effected the exchange of school lands with the State. Captain Bullock had the unique distinction of being appointed on March 3, 1906, Honorary Representative of the Forest Service in matters pertaining to the Black Hills and other Forest Reserves in South Dakota.

Smith Riley has found it necessary, on account of ill health, temporarily to lay down his duties as District Forester. Mr. Riley has not been able to go to the office since the beginning of June, but directed the work from his home until recently when he found it desirable to go East for treatment. His address is Officers' Pavilion No. 1, Walter Reed Hospital, Washington, D. C.

According to present indications, the demand for sheep range in 1920 will be less than it has been for the past two or three years. While the market price on lambs has been pretty well maintained, the price on stock sheep is about half what it was a year ago. Good breeding ewes can be had now for from $8.50 to $9 per head as against $15 to $17 in 1918. It would seem that under these conditions the tendency would be to hold on to the breeding stock, but the uncertainty and the serious drop in prices seem to be having an opposite effect and a number of sheep will be put on the market which might otherwise be held over. The livestock situation is indeed serious. A great many who loaded up under war prices are selling and taking their losses. Those who loaded up with breeding stock are in an especially serious situation and commission outfits are making more of an effort to hold these over than they are those who have loaded up with steers.

We are anticipating a much weaker demand on the Forest ranges the coming season than we have had for some time past. The Northern Colorado feeder market has been hit pretty hard and there will not be as many lambs and steers fed as usual. It is reported that some feeders lost as high as from $25,000 to $50,000 in steers as a result of the slump in the market earlier in the season. Feeders generally, we are told, are buying very cautiously; and since a great deal of the Forest product is feeder stuff, those who loaded up last spring expect either to take no profit or considerable loss. The market is very erratic; it is impossible to figure how or when to dispose of anything that might be salable.

Major Richard T. Guthrie, who served two years in France in the 17th Field Artillery, landed in New York about the middle of August and is now located at the University of Oklahoma as Assistant Professor in military science.

Major Guthrie received an appointment as Second Lieutenant in May 1917 and was successively promoted through the various grades to Major. He wears a croix de guerre with four citations on it, and his record is probably unsurpassed by that of any man who entered military service from the Forest Service. Major Guthrie was Forest Examiner on the Pike Forest at the outbreak of the war.

Lieutenant Paxton who left the Forest Service about two and a half years ago for military service has just returned to the District and is to undertake administrative research work under the office of Silviculture.

Major C. M. Granger, Assistant District Forester in Charge of Silviculture, who left the District in August, 1917, to join the 20th Engineers, has returned to duty.

Timber included in the Slate Creek and Bitter Creek units on the Black Hills and Harney Forests respectively, and involving approximately 14 million feet and 7 million feet has recently been awarded to the Warren-Lamb Lumber Company of Rapid City, South Dakota, at prices of $2.10 and $2.55 per thousand feet

District 3 - Southwestern District

Receipts from grazing amounted to $623,665.97 for the fiscal year ending June 30, 1919. This is an increase of $228,262.03 over the receipts for 1918. There were issued 4,253 grazing permits for 524,571 cattle, 11,246 horses, 1,104 hogs, 800,010 sheep, and 45,655 goats.

An interesting addition has been made to the selection of titles that have from time to time been bestowed on the district forester. "Disposer of Wild Horses" is the latest and weirdest. The company conferring this honor announces itself to be ready to pay $7 per head, provided a place to slaughter the horses is provided.

District 4 - Intermountain District

Plans are underway for the operation of a sign painting shop at Ogden this winter. Forest officers have been called on to get their reqqisitions in promptly.

"Tourists Praise Forest Rangers" is the heading to a news story recently published by the Capital News of Boise, Idaho, and as it makes good reading the item is given in full:

"When you get into the forest reserve you can't go wrong."

That is the expression most used by automobile travelers who have come out of reserves and are being asked the direction and road to a certain place within the reserve, according to J. I. Goldstein of the Bannock Motor Sales Co. Mr. and Mrs. Goldstein have just returned from an outing of more than a month during which they stopped at Hailey, Guyer Hot Springs, Robinson Bar and toured the Challis and Sawtooth reserves.

Mr. Goldstein states he can now understand the popularity of Idaho's forest reserves to tourists as the forest rangers go out of their way to make visitors enjoy the reserves and have all roads plainly marked with all the information needed. He declared it is just as they tell you, "When you strike the forest reserve you can't go wrong." As an example of the road markings, Mr. Goldstein said, "The signs contain such information as the distance to prominent points and a hand indicates the route, the distance to the next stopping place, the location of the ranger station, the point where a telephone can be located, that first aid to the injured can be secured at the forest ranger station, etc., all the information needed, and in addition camping grounds have been arranged at various points equipped with tables, seats and other conveniences.

The forest rangers put themselves out to do favors to tourists and all speak of their courtesy and generosity. For instance, a man a long distance from Hailey broke a part of his machine. Through the forest ranger he got in touch with Hailey on the forest telephone service, a mechanic was called to the phone and the part ordered and soon brought out. This service was given absolutely free, the man told me, and could not have been better had he been paying a handsome price for it."

District 5 - California District

August Vollmer, chief of police, Berkeley, California, has requested permission from the Forest Service to use District's 5 "Law Enforcement" instructions in connection with his local work and for publication in a police journal

The request has been granted. Chief Vollmer states that the information as to methods for the detection of crime as outlined in this publication are the best in the English language.

The book of instructions was prepared for the Arson Squad, and was done under the direction of the district forester by C. L. Hill and C. V. Brereton. Legal phases were prepared in collaboration with H. P. Deckant and C. S. Brothers.

District 6 - North Pacific District

Eagle Creek Camp Grounds, Oregon Forest, was the scene recently of an elaborate and unique banquet, which ended the convention that the Pacific Coast Association of Fire Chiefs has been holding in Portland. Eight large buck deer and eight Columbia River salmon had been broiled for twenty hours over hot coals made from five cords of oakwood burned in a brick-lined pit 40 feet long and 5 feet wide. Over three hundred and fifty fire chiefs attended this banquet, and the large table of the Forest Service seated them in a body. The main speaker was Lieutenant-Colonel Theodore Roosevelt. The addresses contained words of appreciation for the Forest Service, which has opened to the public such delights as Eagle Creek Camp Grounds. The menu of this "venison barbecue" was printed on thin sheets of spruce wood, and specified that the deer had been furnished by Oregon Forests. "Famous Oregon Apples" also were an important item of the menu. The band of the Portland fire department furnished the music.

Mr. Langville recently called on Supervisor Brundages and made an earnest plea for retention of the names that Indians have given to streams, high places, cliffs, lakes, etc., of Columbia Forest. Mr. Langville would like to see immediate official recognition given these names, basing his plea on the fact that the the old Indians who know them are fast dying off and that young Indians, interested in becoming good citizens of the United States, seem to prefer new names and can not be depended upon to perpetuate Indian names.

Much interest was shown in the Forest Service exhibit at the recent state fairs of the District, where it appeared as a feature of the Department display in charge of C. A. Lindstrom, of Washington, D. C. The Office of Grazing, through the efforts of J. L. Peterson, is entitled to special credit for its excellent contribution to the Forest Service exhibit. The main exhibit also showed the best methods of lumbering and forestry, land erosion through deforestation, forest fire effects and prevention, recreation in the National Forests, growing windbreaks, fence-post treating, National Forest timber sales, box testing, wood waste and utilization, etc. Mr. Lindstrom's display has been singled out for admiration and approval, even in the vastness of the Federal display as a whole, to which the name Uncle Sam's Victory Show has been given unofficially.

Only one bid was received for the 600,000 feet of dead western red cedar lately advertised for sale as the Morris Creek area, on the Siuslaw. The price bid was $1 per M feet, the minimum quoted in the advertisement, and the sale was awarded on September 23 to the Delta Shingle Company, the original applicant. The area embraced an old burn, dead standing and down cedar being the only commercial remains of the original stand.

Forest Examiners Bruce Hoffman and G. L. Drake left Portland September 24 for the purpose of making a stumpage appraisal of about 70 million feet of National Forest timber on the Siuslaw, known as the Canyon-Hanson Creek area, for which an application is on file.

D. V. Stroop, formerly of Washington, D. C., and now in the office of Engineering, District 6, had a novel experience recently on the summit of Mount Hood. Dressed in Alaskan garb, he, with the other members of his party, was filmed for a scenario supposedly depicting life in Alaska.

The Oregon Memorial Highways Association, newly organized in Portland, asks for guardianship of certain highways suitable for memorials to the soldiers who fought in France. The Association will line such highways with trees and shrubs, preserve trees and shrubs already growing along their routes, remove unsightly stumps and brush, and wherever feasible such obstacles as obscure beautiful views. Thornton T. Munger was asked to attend the organization meeting. He urged the importance of preserving bodies of virgin timber along highways that traverse forests in addition to making roadside plantations in the open country. The important first effort of this Association will be to absorb the numerous organizations of the State now working for stone shafts or monuments as memorials to the soldiers from their towns. However, those who are active in the movement for highways have made a point of keeping in touch with these organizations and believe them now, almost without exception, ready to come into the Oregon Memorial Highways Association.

The Office of Silviculture has advertised for sale 1,500,000 feet of timber, mainly yellow pine, on the Whitman, in eastern Oregon. Prices: $2.25 for yellow pine, and $1 for Douglas fir and other species. It is expected this timber will be cut for the local markets at Prairie City.

District 6 - North Pacific District (Cont.)

William B. Osborne, who has specialized in fire protection and fire fighting, made flights almost daily during September in a War Department airplane. These flights have resulted in a number of valuable observations. During one recently he photographed very successfully Mount Hood and Mount Adams, the first time these mountains have ever been photographed from a plane.

District Forester Cecil and Oregon State Biologist William L. Finley have been making a trip over the Forests of northern Washington in the interest of game and other wild life.

Blue printing equipment is being installed in the district office and it will soon be possible to do this work there, making the office independent of outside help.

The cooperative agreement for survey, construction, and maintenance of the Salmon River Road, in Alaska, has been executed by the Territorial Board of Road Commissioners and sent to the Secretary for his signature.

Charles H. Flory is ill with typhoid fever and is in the hospital at Juneau. Latest reports indicate that his illness has not become critical.

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WEEKLY BULLETIN

Forest Service - Washington Office

(Not for publication)

October 13, 1919.

Revision of Statutory Roll

The Forest Service has for a number of years felt that its field work was seriously handicapped by the rigid limitations imposed by the statutory roll. This applies with particular force to the positions of Forest Supervisor, Deputy Forest Supervisor, and Forest Ranger. Colonel Graves has been particularly anxious to find some remedy for these limitations to strengthen the Forest Service the next fiscal year. It is realized that very sweeping reorganizations and realignments of field positions must take place upon many National Forests during the next twelve months. This is in part due to our men returning from military duty, in part to the resumption of peace-time activities, and in part to the general break-up of established conditions brought about by war activities.

Naturally, the simplest solution was to ndeavor to secure substantial increases in the salaries paid on the statutory roll. Colonel Graves, however, very early discovered that there were insurmountable obstacles in the way of such action. To a special commission has already been assigned the duty of investigating and reclassifying salaries paid to Government employees in Washington. The report of this commission is due January 1, 1920. It is anticipated that the commission may then be asked to conduct a similar investigation for all other Government employees, and in any event it is certain that any action proposed for any class of Government employees, contemplating increases on the statutory roll, would have to conform broadly with the general scheme which the reclassification commission will propose, and that action by Congress would almost certainly be governed by the action taken upon the reclassification report.

Colonel Graves then considered the possibility of securing relief in some other way for the special class of Forest Supervisors, Deputy Forest Supervisors, and Forest Rangers, these men being charged directly with the responsibility of protecting the National Forests as great public properties, and conducting the current business with the public. To secure special consideration for them on the statutory roll seemed impossible, since practically every department in the Government service is in a similar position with regard to special classes of employees. If an exception should be made in the statutory roll for such officers, the entire plan of general adjustment through the work of the reclassification commission would break down.

Colonel Graves was aided by the sympathetic understanding and cooperation of Secretary Houston, who appreciated that during the coming period of realighment and readjustment the Forest Service is decidedly in need of greater flexibility as to field salaries and positions. He has therefore approved omitting from the statutory roll all Forest Supervisors, Deputy Forest Supervisors, Forest Rangers, and statutory Forest Guards, and including in the estimate for the Forest Service, under general expenses, in lieu of such statutory positions, an appropriation reading: "For the employment of Forest Supervisors, Deputy Forest Supervisors, Forest Rangers, and Forest Guards, one million six hundred and seventy-three thousand five hundred and forty dollars." This sum is the exact equivalent of the total sum of statutory salaries for the same positions.

If the appropriation act for the fiscal year beginning July 1, 1920, is passed with this change, it will afford a considerable means of relief. It is realized that this sum of money will not enable the Forest Service to pay salaries equal to the remuneration received for similar work in private employment, nor will it meet all the difficulties arising from the high cost of living and the depreciated value of the dollar. It will, however, enable the organization in each District to cut its cloth within certain limitations to fit the varying conditions. It will make it easier for the Service to promptly reward marked efficiency, and also will stimulate more efficient administration by making it possible to utilize for salary increases savings brought about by improved organization.

Of course it is impossible at this time to forecast what action Congress may take. It is believed, however, that the plan proposed is reasonable and it is hoped that it will favorably impress members of Congress. At any rate, it is the best prospect, from a salary standpoint, that the Forest Service has been able to present to field officers in several years. I am not predicting favorable action, but I feel that Forest officers in these positions are entitled to know that an effort is being made to improve the existing conditions.

A. F. POTTER.

Reforesting Fire-burned Areas in California.

Hardly had the reports of the recent fires in southern California been received in Washington than the suggestions for reforestation made their appearance. One of the most interesting was that the Forest Service get busy without much unwinding of red tape and scatter tree seeds by airplanes over the burned areas. The speed with which the suggestion was fired into the Washington office indicates that probably the individual making the suggestion failed to give full consideration to species, soil conditions, possibility of raising trees on an area best adapted for chaparral and how to keep the seed turned loose at 12,000 feet altitude from hitting the next county.

To Study Wages Throughout the United States

The work of the joint Congressional Commission on reclassification of salaries of federal employees in Washington has reached the stage where consideration is to be given to a study of salaries for similar work in other cities and by other than federal employees.

Committees have been organized for the different kinds of service. The term "service" as used by the commission refers to the lines of work under which activities of the employees are grouped.

The committees have been called on to advise the commission as to all sources of wage data. On each committee there are representatives for the administrative end of the government service, of the employees, and of the public.

The commission will later send special investigators to interrogate private employers and look into the question of wages, living conditions, etc., where the conditions are similar to those in government service. By making such comparisons it is hoped to determine what constitutes a fair wage for government employees.

Questionnaires for Foresters

Questionnaires have been sent out by the Society of American Foresters to all foresters not in the employ of the Forest Service. This work is being done in cooperation with the joint congressional commission on the reclassification of salaries, which has called on the society for help.

The profession of forestry has not yet reached the stage where there is a large number of private employers competing with the federal government, and so the task of getting comparative data is not an easy one. However, many valuable data have been received and they show that the normal salary of foresters in private employ exceeds that of men in government employ, although the responsibility is less. Compilation of the data has been made particularly interesting because of the fact that some of the men with whom we worked side by side in the Forest Service are receiving salaries approaching and exceeding those paid cabinet officers, to say nothing at all as to the amount they exceed the salaries paid their former fellow workers.

Foresters in Porto Rico

An S. O. S. call comes from E. Murray Bruner, forester of Porto Rico. Mr. Bruner wants an assistant forester and a technical planting assistant, and is calling on the Forest Service for help. There is an interesting story back of this call.

The assistant forester's job pays $2,000 per year, and that of technical assistant $1,800 per year.

Foresters in Porto Rico (Cont.)

The offer that caused the desertion and vanancy gives each man an initial salary of $200 per month and living expenses both in office and in the field, and was made by an engineer in charge of the development of an immense irrigation project.

Putting the Forests on the Map

That Forest officers in Districts 5 and 6 did effective work in putting the National Forests on the map is indicated by a letter recently received in Washington from a well-known author. An excerpt of the letter follows:

"Perhaps you will remember that last winter I conferred with you about illustrations for a book, "Seeing the Far West," to be issued in 1920. For this volume I had many fine photographs from your Department.

You may be interested in learing of the further fortunes of this book in its beginnings:

Charles Howard Shinn, of North Fork, California, who is in the Forest Service, learned that I had such a book in hand. He wrote me that I must surely see the National Forests of the coast before writing it. Next thing I knew came a letter from Mr. R. F. Hammatt, of the San Francisco office of the Forest Service, proposing that I take a trip in California, to be engineered by the Forest Service. As a result, I spent three weeks in California under his guidance. We were in the Lagunas, in the Sierra Forest, in the Lake Tahoe country, and in the Shasta Forest. Wonderful opportunity was given me to see. Mr. Hammatt and one and sometimes two local foresters were with me. Chapters for the book were written from time to time, and I had opportunity to read these to the local men and get their reaction and correction, where this was necessary.

In the meantime, Mr. Hammatt told me that the Portland office, upon learning of my visit and its purpose, suggested that I give three weeks to Oregon and Washington. There, too, I had wonderful opportunities. Beginning at Klamath Falls, where Mr. Talbott and Mr. Jacobson met me, I had a week in the country up to Bend, and to the left and the right. At Hood River Mr. Jackson met me and I went with him in his machine for ten days down the Columbia Highway, to Olympia, to the heart of the Olympic Forest, to Mount Rainier, and across Washington to Lake Chelan.

Then my time was up and I came east.

But it was a wonderful experience. And such men as those in the Forest Service are! It was good to meet them, and it is good now to think of them. I don't need to tell you that Jake and Tom and Jack, and everybody else in the Service whom I met are of the salt of the earth. There is something in the work you men are called on to do that makes you a kind of your own, whether you are in Washington or out in the field. You are a royal lot.

And after showing me the way for three thousand miles by automobiles, they thanked me for coming and giving them a chance to show me! Some of them were good enough to ask me to come again, to visit all the Forests, and to write a popular book on the great playgrounds of the nation which mean so much now, and will mean still more, in the serious life of the people."

California Foresters on the Job

Several members of the district office at San Francisco are scheduled for participation in the Sunday afternoon lectures on popular science topics given under the auspices of the California Academy of Sciences in the Museum in Golden Gate Park. The following illustrated lectures by members of the Forest Service have been announced:

October 19 - California's future; what the Forest Service is doing to determine and meet the coming demands for timber and other National Forest resources - C. A. Kupfer.

California Foresters on the Job (Cont.)

October 26 - Some forestry problems, both government and private - R. F. Hammatt.
November 2 - Range Management on the National Forests in California - F. D. Douthitt
November 9 - Industrial research in the Forest Service - Don P. Johnston.

Are Bears Predatory?

Ranger J. A. Frieborn of the Tonto has the following to say:

"On the evening of April 14, 1919, I stopped for the night at the Wallace & Bly ranch, under the Mogollon Rim, on the Pleasant Valley District, and found a large silvertip bear hide tacked on the house. Upon asking who had killed it, I was told that the day previous, Cap Smith, a government hunter, with his dogs, and accompanied by Frank Wallace and Fred Hobson, had found where a bear had killed nine head of cattle in a canyon near the ranch, and had trailed it over a ridge, where it turned on them, and it was finally killed by a shot from Hobson's 30-30.

The next morning I went to this canyon and found nine head of cattle of all ages lying in the bottom of a small gully with their insides carefully removed. In fact, they were put in cold storage by Bruin, as there was some snow on the ground. From the sign, every critter that had visited that canyon in several days had been butchered and dragged to this gully, some of them being dragged a distance of two hundred yards, which would be an impossible feat for anything besides a bear.

Also, as further proof, I have seen bears kill elk calves in Hayden Valley in the Yellowstone Park. In fact, they get the most of them in the spring there. I do not believe that bears as a rule are predatory animals, but that individuals acquire the habit; and also that it is confined to the grizzly, or silvertip, as the black and brown bears remain at the hotel dumps in Yellowstone Park during the elk calving season, while not a grizzly can be seen."

Purchasing Agents Get Together

The Government Purchasing Agents Association is the latest in the way of cooperation. This association is made up of members who do the buying for the various government bureaus and establishments located in Washington, D. C. The members have banded together so that they will have a means of passing along to each other information affecting purchases and so increase the efficiency in spending Uncle Sam's money and getting full value in goods.

Lumber in War Times

The War Industries Board has published a bulletin "Prices of Lumber," which was compiled by Prof. R. C. Bryant, Yale Forest School, a member of the Forest Service last year while engaged on this work.

This bulletin is one of fifty war-time price studies in different industries. These studies aim to make the price quotation gathered by various government agencies available to those concerned with the problems of business readjustment, and to provide a permanent record of the great revolution in prices that accompanied the world war.

The figures show the amount of American wood devoted to war purposes. The following table shows the amount of the different woods and the use to which they were put:

Lumber in War Times (Cont.)

For airplanes:	Feet
Spruce	104,351,000
Douglas fir	72,385,000
Port Orford cedar	4,513,000
American mahogany	20,083,000
African mahogany	6,930,000
Black walnut	10,999,000
Cherry	1,006,000
Birch	663,000
Oak	311,000
Gunstocks, black walnut	98,000,000
Artillery wheels, hickory	3,800,000
Artillery wheels, oak	15,200,000
Vehicles for animals	77,000,000
Vehicles, motor	20,000,000
Boxes and crating	2,000,000,000
Buildings	3,000,000,000
Shipbuilding, southern pine	355,145,000
Douglas fir	424,427,000
Oak	2,214,000
Locust for treenails	2,142,000
Other hardwoods	8,300,000
Other uses for navy	121,875,000
Total	6,349,344,000

In addition to the above amounts a large quantity of wood was used for tool handles and like purposes, for which figures have not yet been published.

The history of government regulation of the lumber trade is gone into fully. The purpose of the government in undertaking such regulation was to fix prices, to promulgate conservation measures designed to husband the lumber resources of the country, and to determine export and import restrictions.

The chief aim in fixing prices of lumber was to insure an adequate supply for the government at a reasonable price, for it soon became apparent that the government demand for certain kinds of lumber would be so great as to inflate prices unless some form of control were instituted.

Land Exchange Legislation

Congress has before it at the present time twenty-five individual land exchange bills and one general exchange bill. These bills are along the same lines and aim to provide for an exchange of private timberlands for National Forest lands.

Recently the House Committee on Lands had a meeting to consider this class of legislation, which seems to indicate possible early action in some form or other.

The value of these bills lies in the fact that they will make possible the consolidation of private and government lands, which will make for better administration than is possible now where each class of property is broken into by holdings not under control of the owner of the surrounding lands. Many Forests are badly checker-boarded in this respect.

Washington Notes

Captain Joseph Kittredge has returned to civil life and is now assigned to the duties of administrative assistant in the branch of research in the Washington office. Captain Kittredge was formerly in District 1 in the office of Silviculture.

Francis Kiefer is back from France, as we announced some time ago, but he will not be back with us in the Forest Service. Mr. Kiefer is now an independent operator interested in the location, examination, and acquisition of pulp timber.

Washington Notes (Cont.)

J. G. Falck, property auditor, is in Washington drawing forth our property skeletons and showing us the error of our ways.

Forest Products Laboratory Notes

Inquiries for information on waterproof glues have been coming in thick and fast. During the month of September there were 228 inquiries inspired by press notices, and an additional 80 requests as a result of the Chemical Exposition. Miss Burns, who had the handling of these requests, has started on her vacation. Do you blame her?

Leslie K. Pomeroy and Eugene P. Connor have left the Laboratory and are on their long contemplated trip around the world. For the past two years Messrs. Pomeroy and Connor have been busy kiln drying lumber and the trip is in the interests of the Standard Dry Kiln Company, which has clients that need looking after.

District 2 - Rocky Mountain District

The fishing season in Colorado and Wyoming is about over, and so the weekly fishing bulletins have been discontinued. To judge by the hearty approval accorded these bulletins and the extensive use made of them by the newspapers, they hit the mark.

The Devil's Head Lookout Station on the Pike Forest was the subject of a recent attack by the Denver representatives of the Kinogram corporation. W.L. Barker of the district office. accompanied the movie operator and saw to it that worth-while pictures were taken. The pictures will be sent to the World Picture Corporation for distribution. Miss Helen Dowe, the only woman observer in the Rocky Mountains, will so make her bow to a large audience and show how she spots fires on the Pike.

W. I. Hutchinson and W. L. Barker of the Office of Information and Exhibits have returned to Denver from a five weeks' trip to the Minnesota, Wyoming, and Colorado State Fairs, at which the District Forest Service exhibit was displayed. The exhibit consisted of a miniature summer home and ranger station set-ups, with painted backgrounds of lakes and mountain scenery; an erosion model; relief map of the National Forests of the United States; poisonous plant specimens; grazing placards and photographs and bromides. Motion pictures of National Forests and outdoor life attractions were also shown at the Minnesota and Wyoming fairs.

The interest shown by the public in these exhibits was very gratifying. A total attendance at the Minnesota Fair was 146,000 people, the largest attendance being on Labor Day when 32,078 people, actual count, viewed the exhibit in 10 hours, which is a record for Forest Service exhibits at State fairs for other districts to shoot at. The total attendance at the Wyoming State Fair was 4,000, and at the Colorado State Fair 46,000, making a total of 196,000 people for the three fairs.

The timber sale receipts for this district for the month of September, 1919, were the largest recorded since 1908, reaching a total of $31,028.50. The only previous record that nearly approached this month was January, 1915, when the receipts were $30,489.91.

Community service has been given a good test on the Harney Forest through the work of the Keystone (South Dakota) Community Club. This club was organized through the efforts of Ranger Theodore Shoemaker, one of the old timers and stand-bys in the Black Hills region for many years.

The club was organized to foster community spirit, promote local industries, aid in the protection and propagation of fish and game, and to better local conditions in general. At the present time there are five standing committees whose names and duties are as follows:

1. Mining:
   To prepare an exhibit of minerals to be shown at County and State fairs.
   To aid legitimate mining operations.

2. Recreation:
   To cooperate with the Forest Service.
   To establish and maintain several public camp sites.
   To provide suitable recreation for the public.

3. Roads:
   To work in cooperation with the county commissioners and see that the community gets its share of good roads.

4. Fish and Game:
   To cooperate with State and Federal officers in every possible manner to aid in the protection and propagation of fish and game.

5. Agriculture:
   To cooperate with the County Agent, Bureau of Animal Industry, Biological Survey, and Forest Service to secure the benefits that may be derived for the betterment of local conditions.

Ranger Hedlum, now in charge of the district in which the town of Keystone is located, is a member of three of the committees, and so has a good working connection with the local population.

District 3 - Southwestern District

Why planting has not been undertaken on a large scale in this district is clearly set forth in a recent letter from Forest Examiner G. A. Pearson. This is what he has to say:

"During the past eight years, artificial reforestation in Arizona has been entirely experimental and has been concentrated at the Ft. Valley Experiment Station. This course was adopted because earlier attempts at extensive reforestation had resulted in failure and demonstrated that the methods successfully practiced in other regions would not bring satisfactory results under the adverse climatic conditions of the Southwest. The planting problem has now been solved as far as securing survival is concerned, but the intensive methods required are too expensive to warrant the adoption of an extensive planting program. This condition is accentuated by the slow growth of trees in this region. In the Northwest, where soil and climate permit the use of comparatively inexpensive methods, plantations could before the war be established for five or six dollars per acre, while here the cost was from twenty t twenty-five dollars per acre. Furthermore, the yield per acre in the Northwest is easily ten times as great as in this region.

In view of the above circumstances the Forest Service is spending the bulk of its planting funds in the Northwest and other regions where anticipat returns are commensurate with the cost of establishing plantations. Under present economic conditions, commercial forest planting in Arizona and New Mc ico is far from being a sound financial enterprise. For this reason we must depend upon natural reforestation even though this method be slow and uncertain. Artificial reforestation is warranted only under extraordinary circumstances, as on watersheds and other areas whose returns are not limited to the value of the timber produced.

The present policy in District 3 is to continue planting on the Coconin on a small scale not exceeding thirty or forty acres per year, primarily as a demonstration of what may be accomplished in the way of restocking old cutting areas which were denuded to the extent of precluding natural reproduction. Whether this program is ultimately extended will depend upon the results achieved and upon future economic conditions."

Supervisor Paul P. Pitchlynn of the Coronado has been transferred to the office of Operation at San Francisco on special work.

H. Basil Wales succeeds Mr. Pitchlynn as Supervisor of the Coronado.

This district has had a very satisfactory fire season. There have been general rains in various parts of the district which have offset the possible danger resulting from early killing frosts.

Chief Clerk Montgomery of the Tusayan has resigned and has entered a dental college in California.

District 4 - Intermountain District

District Committee meetings were resumed with the present month. After some discussion as to the form the meetings should take, how to bring up subjects for discussion, and a consideration of procedure, the various members in attendance gave reviews of the work during the summer.

Approximately 80,000 rainbow trout fingerlings were planted in the streams near Pinedale by Supervisor Cooper, who, in cooperation with the State authorities, is preparing a plan for a systematic stocking of the waters on that Forest.

District 6 - North Pacific District

Royal J. Gick, formerly clerk on the Snoqualmie, has returned from France and is now in the office of Accounts in the Portland office. Mr. Gick was chief clerk in the office of the chief engineer of the forestry section, division of construction and forestry.

Charles J. Kraebel and Robert Weitknecht are back from military service in France. Lieutenant Kraebel has written a history of the Forest regiments. For three months of his stay in France he was on the staff of The Stars and Stripes. Captain Weitknecht was with the 66th field artillery brigade during the 18 months he served in the A. E. F. He was at the front in four major operations, after which he was with the Army of Occupation in Germany for six months. He had a detail of five weeks with the American Commission, in the work of appraising war damages to forests and sawmills.

Chinese pheasant hunting in Lane County, where machines have made daily flights to and from the aviation field near Eugene, is being destroyed by the airplane forest patrol according to complaints made by hunters. These ships in the sky seem mammoth hawks to the pheasants. While pheasants on the ground are said not to notice planes high in air, they have grown wary of automobiles, whose occupants have frequently shot them, in violation of the law. So sportsmen fear that airplanes and automobiles together may cause Lane County to be deserted permanently by the pheasants. The aviation field near Eugene was formerly an excellent hunting ground.

The successful recreation season just past has left rangers worried over the future of the wild flowers that are so important to scenic beauty. On the Oregon Forest especially, rhododendron growing along the road leading to Mount Hood has been gathered to an extent that may point to its final extermination through loss of pollen. It is necessary to educate the people to exercise some restraint in gathering wild flowers and not fill their automobiles with them in such profusion as they are doing at present.

The season at Eagle Creek Camp Grounds, on the Oregon, has been most successful. Though approximately 120,000 people used them, tables, comfort stations, stoves, and other equipment, suffered almost no damage. Most campers cooperated willingly in an effort to keep the grounds in a sightly condition. Additional equipment has been supplied as needed. Fuel and piped water have been furnished free. No arrests for disorderly conduct were made during the season, although in five instances people were requested to come back to extinguish fires they had left burning. Six conventions banqueted here during the present season, the fourth that Oregon National Forest has entertained the public at Eagle Creek Camp Grounds.

District 6 - North Pacific District (Cont.)

The fire hazard was so great in the Juan de Fuca and Hoods Canal sections of the Olympic on September 29 that State Forester Pape and Supervisor Fromme persuaded Governor Hart to postpone the opening of the hunting season, set for October 1. Governor Hart did postpone it, by proclamation, but on Tuesday, September 30, at 4 o'clock, a rainfall, general over the Olympic Peninsula, so lessened the fire danger that, at the solicitation of all concerned, he cancelled his proclamation, and the hunting season opened October 1.

Major Frederick W. Rase, who left "Lands" for military service in 1917 and has been with the A.E.F. in France most of the time since, visited here recently on his way to Fort Leavenworth, Kansas, to join his regiment.

C. A. Lindstrom, in charge of the Department exhibit, and F. C. Crass, from Washington, D. C., after shipping their exhibit material from Salem to Salt Lake, spent a day visiting Columbia River Highway and Eagle Creek.

Heliotrope Ridge, Mount Baker, Washington National Forest, has been chosen as the site of a contemplated annex to the normal school at Bellingham, Washington. Heliotrope Ridge, near the summit of Mount Baker and bordered on north and west by the Roosevelt Glacier, has an elevation of about 8,000 feet. It is believed that zoology, geography, botany, and nature study generally, can be pursued more effectively here than at Bellingham. The plan does not contemplate regular school hours at Heliotrope Ridge, but rather that week-ends be spent there, in study and recreation and as a part of the regular school program. The Forest Service will cooperate in this enterprise. The necessary ground will probably be granted under special-use permit. Professor Herre plans to build a cabin in the vicinity of the ridge and furnish it with a stove and suitable sleeping quarters. The students will bring their own blankets, and it is intended that the week-end trip shall cost not more than five dollars each.

The rain that fell upon Olympic Peninsula September 30 is the only thing that prevented a serious outcome of the crown fire which raged around a summer resort on Lake Crescent. The fire started from the spark of an engine hauling logs on the spruce railroad. It had been put under control, when, in from thirty to forty different places, a high wind carried it over the line that had been built. It raced up a steep slope toward the summer resort so rapidly that it could not be headed off. Then the men fought to save the summer resort and homes along the lake. Later the fire was trenched on both sides, but no attempt was made to stop it from burning at the top of the ridge. Finally the rain put it out.

Oregon goat raisers have organized an association, the principal object of which is to secure use of National Forest ranges suitable for goat raising.

C. R. Stillinger, of the Bureau of Plant Pathology, has finished his season's work and gone from the southern part of District 6 to Spokane, Washington.

Myrtle wood is being wrought into bud vases, nut bowls, jewel boxes, smokers' sets, picture frames, and other novelties, and also into household furniture, at a factory in Coquille, Coos County, Oregon, operated by J. H. Oerding and his five sons. During the war the five sons enlisted, and things were quiet at the factory. Now, however, there is activity there. Mr. Oerding fears that myrtle wood outside of National Forests will soon disappear, since none is planted and natural reproduction will not keep pace with the cutting. There is a supply of it on the Siskiyou and Umpqua Forests, not far from where the Oerding factory is located. National Forest myrtle wood is usually sold under the "other species" clause of the timber sale agreement.

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WEEKLY BULLETIN

Forest Service - Washington Office

(Not for publication)

October 20, 1919.

Reclamation Withdrawals in the National Forests

The Sundry Civil Appropriation Act approved July 19, 1919, contained the following provision:

> "The proceeds heretofore or hereafter received from the lease of any lands reserved or withdrawn under the reclamation law or from the sale of the products therefrom shall be covered into the reclamation fund; and where such lands are affected by a reservation or withdrawal under some other law, the proceeds from the lease of land and the sale of products therefrom shall likewise be covered into the reclamation fund in all cases where such lands are needed for the protection or operation of any reservoir or other works constructed under the reclamation law, and such lands shall be and remain under the jurisdiction of the Secretary of the Interior."

A few weeks ago the Department of the Interior made a request on the Forest Service for a complete list and copies of all grazing leases, and leases of any other kind which came within the provision of the act, and a statement of the amounts which have heretofore been collected and an estimate of the amounts which may still be collected as the result of such leases. Request was also made for a statement of the amounts received from the sale of timber or other products and that immediate steps be taken to transfer the amounts collected to the credit of the reclamation fund.

This is all very interesting and not without some complications.

Under the law providing for the reclamation of arid lands authority is given for the withdrawal from entry and disposal under the public land laws of any lands which it is believed will be needed in connection with the construction and operation of reclamation works. Under this authority a good many withdrawals have been made and a number of them include areas now set aside as National Forests.

About 15 years ago the question arose as to whether the Department of the Interior or of Agriculture should exercise jurisdiction over the lands so withdrawn when located within the boundaries of a National Forest. The particular question arose in connection with the proposal made by the Reclamation Service that it control the leasing of such withdrawn lands within the National Forests for grazing purposes. The Department of Agriculture did not view this proposal with favor, and as a result of the representations made the Secretary of the Interior, on February 27, 1909, held that:

> "When land within a National Forest is withdrawn for reclamation purposes under the Act of 1902, the withdrawal for that purpose shall be considered the dominant one and the land will remain liable to use by the Reclamation Service. Prior to the time the Reclamation Service requires the land for actual use it will remain, for administrative and protection purposes, under the control and jurisdiction of the Forest Service."

There was no further agitation of this question until when on March 14, 1916, the Director of the Reclamation Service stated that the Reclamation Commission had decided to lease for hotels, summer cottages, and other recreational purposes, lands which had been so withdrawn and which were lying adjacent to a completed reservoir covering a natural lake site within the boundaries of the Rainier National Forest. At the same time question was raised as to the propriety for the Reclamation Service to receive the proceeds from the sale of timber cut within National Forests from lands covered by such reclamation withdrawals. It was impossible for the two departments to come to an amicable arrangement and so the question was finally presented to the Attorney General for an opinion, which he made, and was as follows:

> "Authority to lease the strip proposed is in the Department of Agriculture and the rentals should be covered into the Treasury as miscellaneous receipts."

Reclamation Withdrawals in the National Forests (continued)

In a previous opinion by the Attorney General it was held that, subject to the necessities of reclamation use, the timber on withdrawn lands could be sold by the Department of Agriculture in the same manner as if the reclamation withdrawal did not exist, and that the proceeds should be deposited as "miscellaneous receipts" like any other receipts arising from the National Forests. In view of past events it occasioned considerable surprise in the Forest Service to receive the request quoted above, asking us for an accounting.

Should it finally become necessary for the Forest Service to make an accounting the complications will be many, particularly as 25 per cent of the proceeds have already been turned over to the various States within which the National Forests are situated, and an additional 10 per cent used for road construction purposes. This legislation was enacted without any knowledge on the part of the Forest Service. If it continues to stand it means that the jurisdiction of the Department of Agriculture of lands within National Forests passes to the jurisdiction of the Department of the Interior when such lands are withdrawn for reclamation purposes.

To Discuss Private Forestry Program

The proposed program of forestry for the nation will be discussed by Col. Graves at the meeting to be held at Syracuse, N. Y., under the auspices of the New York State Forestry Association on November 11.

This meeting will afford an opportunity to manufacturers, retailers, dealers in lumber, and foresters to get first hand an explication of the proposed program. It is expected that there will be in attendance representatives from the Empire State Forest Products Association, from the American Pulp and Paper Manufacturers' Association, and from the Retail Lumber Dealers' Association of the State of New York.

Fire Publicity in New Jersey

Forest fires are a serious menace in New Jersey. The Forest Fire Service of the Department of Conservation in cooperation with the State Highway Commission has inaugurated a special campaign of publicity to bring home to the people of New Jersey just the losses caused by fires.

As an opening gun a small leaflet on "Forest Fire Prevention and Highway Construction" has been distributed to all contractors engaged on state contracts. The leaflet sets forth the causes of fires, just how serious forest fires really are, and a number of practical hints to prevent fires.

Forest Receipts Show Increase

An increase of $76,228.90 is shown in the National Forest receipts for the months of July, August, and September, 1919, over the receipts for a similar period in 1918. To date the total amount is $587,695.39.

The following table shows the districts in the order of their contribution:

District	Amount
5	$147,995.29
6	115,134.87
2	96,963.61
1	76,795.35
3	75,740.16
4	40,225.43
7	34,840.68

The distribution of receipts among the activities is as follows:

Forest Receipts Show Increase (Continued)

Timber Sale..................	$504,810.80
Timber Settlement........	542.77
Timber Trespass..........	343.99
Grazing - C. & H..........	38,301.30
- S. & G..........	17,207.99
Grazing Trespass.........	11,718.48
Special Use...............	6,806.15
Occupancy Trespass........	76.48
Water Power...............	5,903.74
Fire Trespass.............	192.27
Turpentine Sale...........	1,292.42
Property Trespass.........	5.00

Timber sales show an increase of $79,240.59; cattle and horses $10,924.84; turpentine sales $1,169.17; special uses $612.67. The other activities show decreases.

An Interesting Decision

The Supreme Court of the State of Washington has just directed the dismissal of the case of Samuel S. Lehman vs. the Maryott and Spencer Logging Co., which had come to it on appeal by the defendant against whom a decision had been obtained in the lower court in an action to recover damages for loss suffered by a forest fire on the Olympic Forest. The fire was alleged to have been caused by negligence on the part of the logging company.

This case is of particular interest because the company made a voluntary settlement with the Forest Service last May by the payment of $1,358 for damages sustained by the United States through the same forest fire. The fire originated on the company's property, causing a loss of about $50,000, and spread to adjoining forest and private land.

A judgment against the logging company was obtained last December for failure to adequately suppress a fire which had been burning on the company's work and spread to the property of Samuel S. Lehman.

In directing the dismissal of the case, the Superior Court reviews in detail the successive steps in the operation of the company in connection with its logging operation and the precautionary steps taken and holds that the spread of the fire was not caused by any negligence on the part of the company, but that it in fact had taken every reasonable and prudent precautionary measure.

A Final Tinker with the Clock

A final tinker with the clock takes place October 26, 1919. This time we gain the hour, under the loss of which we have labored since last March. The tinker is final as far as the present laws indicate, because of the repeal of the "light saving act." Forest officers will have cause to remember this tinkering with the clock because of the delay in the appropriations for the department through the veto by the President of the bill which carried the money and the repeal rider, and then the delay in the enactment of an appropriation measure without the objectional rider.

In our advice last year we expressed fear of a possible hibernation on the part of the isolated ranger who might follow the advice of "stopping the hands" as against "turning them back." Evidence from these same isolated rangers as it came to the Editor of the Weekly Bulletin has indicated clearly that the advice is not needed this year and that there is no danger of a "long hibernation."

Amendments to the Manual

The regular quarterly sheaves of amendments to the Manual due for distribution October 1 will not make their appearance until November 1. The delay is caused by the complete revision of the Trespass Section of the Manual.

Economy in Notebooks

The detachable cover for the field note book (Form 289) was adopted as an easy and convenient measure for economy. It is expected that these covers be used over and over again with new fillers and not that notebook filler and cover be filed away. Recent requisitions received by the property clerk indicate the possibility of many notebook covers having been filed away with the fillers. If you are guilty of this practice, stop it at once, dig out the covers from the files and put them to further use.

Insurance for Forest Service Employees

Membership has increased 50 per cent in the Government Employees Mutual Relief Association since the first of this year, not counting the men who have been reinstated after return from military service. If new members continue to come in at this rate much longer the Association will have to consider limiting its membership to some definite number or else employ a Secretary who will give full time to the Association's business.

Persons contemplating joining should send in their applications at once before the bars are put up.

Washington Notes

Col. Graves and J. G. Peters, leave tonight for Indianapolis to attend the Tri-State Forestry Conference scheduled for October 22 and 23. Col. Greeley will leave Wednesday.

This conference will be attended by representatives from the States of Ohio, Indiana, and Illinois. Each of the Forest Service representatives will occupy places on the program of the conference and emphasis will be placed on the private forestry program launched by Col. Graves.

James T. Jardine is in Norfolk, Va., where he will make an address on Range Improvement at the Forty-third Annual Meeting of the American Humane Association.

This year's meeting covers four days, and a wide range of subjects is up for consideration. Mr. Jardine's address forms a part of a special program giving attention to livestock matters.

Forest Products Laboratory Notes

News travels. A few days ago a letter was received from Tokyo, Japan, making a request for detailed information in regard to casein glues.

A. F. Hawes was at the Laboratory last week in connection with the pulp and paper industry studies upon which he is now engaged.

J. D. Diehl has resigned as Chief of the section of operation and is now assistant principal of the Milwaukee Technical High School for boys.

The commercial pulping trial of cotton seed hull fibre has proved successful according to word received from Dr. Kress. A first class grade of paper is now being made with varying percentages of hull fibre and sulphite pulp.

Forty members of the Southern Pine Salesmen's Service visited the Laboratory last week.

C. H. Teesdale has been placed in charge of the industrial relations work of the Laboratory. He will serve as liaison officer between the Director's office and the industries, and aim to further the practical application of the results obtained in the Laboratory.

George M. Hunt succeeds Mr. Teesdale and will be in charge of the section of preservation.

About 6,000 board feet of the best Philippine mahogany is on its way to the Laboratory, coming from the Buffalo warehouse of the War Department.

Shirley Allen has wound up his work at the Laboratory and taken up the duties of Deputy Supervisor of the Klamath Forest, California.

K. Ueda, professor of chemistry at Kanazawa Technical College, Japan, will spend about a month in Madison, and plans to spend considerable of his time at the Laboratory.

District 1 - Northern District

District Forester Rutledge took a flyer recently. This is what he has to say about his experience:

"The fire detection problem is settled. Even with the smoke and haze present today, one observer in a stable machine such as the one used can do the work of locating fires more effectively than 100 lookout men.

In spite of the novelty of a first flight and the sensation accompanying it, I had no difficulty in locating points on the earth, such as fires, roads, streams, etc. On one turn of the machine several miles of the Rattlesnake Valley stood out in bold relief and I could have located a fire within a few hundred feet even without the aid of maps and mathematical computation. On another turn, we topped Mt. Sentinel and the panorama of Pattee Canyon unfolded itself to view, every gulch, field, and ridge coming into perfect visibility. The absence of a feeling of altitude is remarkable since every object, such as an automobile, was remarkably distinct at an elevation of 3,000 feet. I have had the impression that the high rate of speed necessary would prevent clear vision and the location of fires, but that impression is entirely removed, for while traveling at a rate of 118 miles per hour there was no interference with my ability to make accurate locations.

If a gas can be procured, of which I have no doubt, which by dropping a few bombs will at least smother the flames until men can reach them, the suppression problem is also solved.

If we had been equipped with a dozen of these planes at the beginning of this season so that after each electrical storm the resulting fires could have been located and bombed, two million dollars and a million acres of timberland could have been saved in this District alone.

I give this as my firm opinion after 33 years spent in the mountains, 15 of which I have devoted to trying to control forest fires with my feet glued to the earth.

The Chamber of Commerce and the people of Missoula can render no greater service in protecting a resource that means millions to the development of the State than to aid us in securing a flying field and the assignment of patrol and bombing planes for use at this and other points in the District."

Glenn A. Smith is back in Missoula once more and is now Assistant District Forester in charge of Grazing.

Resignations have been submitted by two old timers, much to the regret of the personnel of District 1. Supervisor Haines leaves the Service and enters the employ of the Anaconda Copper Mining Company. Mr. Haines has been a member of the Service for a considerable period. He started in as Assistant Forest Ranger on the Lewis and Clerk in February, 1907. In 1909 he was transferred to the Coeur d' Alene and was made Deputy Forest Supervisor on April 4, 1910, and later Acting Forest Supervisor, until his resignation in 1913. In December, 1915, Mr. Haines was reappointed to the Service as Forest Ranger and in May, 1916, was promoted to Supervisor of the St. Joe.

Charles F. Howell entered the Service in May, 1908, as Forest Guard on the Kootenai, being later transferred to the Pend Oreille, and then to the Selway, where in 1915, he was promoted to Forest Supervisor.

Forest patrol by airplanes seems assured for the Northwest during the next fire season.

Major Alfred D. Smith of the United States Army Aviation Corps, in charge of the organization of air patrol in the Northwest, recently held a conference with District Forester Rutledge and State Forester Van Hook. Major Smith reached Missoula by airplane, making the trip through falling snow from Spokane to Missoula in 2 hours and 10 minutes.

The patrol system is to be extended to the States of Washington, Idaho, Montana, and Wyoming. Three main bases will be established for the six States with two sub-bases, and from 15 to 20 sub-bases to be used solely for the assembling of supplies. Fifty-four planes are to be put into commission. The pilots will be Army Aviation officers, and the observers Forest Service men familiar with the country covered by the flights. It is also planned to take photographs from the planes and make photographic maps of the Forests. Radio apparatus will be carried to report fires.

District 1 - Northern District (continued)

The seed crop is poor this year. No white or yellow pine seed has been located. In some sections there is a considerable amount of larch, but the cones are about half the usual size, and they have failed to mature. Douglas fir cones are plentiful, but have also failed to mature.

Cedar trees 2,000 years old have been found on the Kaniksu Forest by Forest Examiner C. R. Clark, who is making a cruise and growth study in the region of Granite Creek. These trees were recently pointed out to J.W. Girard, who reports that the largest of the trees are about 12 feet in diameter.

As a result of the many resignations there is a rather general moving around in the district.

D. L. Beatty succeeds Mr. Haines on the St. Joe; B. W. Clark goes to the Lewis and Clark, succeeding Mr. Beatty; H. M. Baum, now Deputy on the Beartooth, goes as Supervisor to the Lolo; Fay G. Clark becomes Supervisor of the Deerlodge; Fire Chief F. J. Jefferson on the Clearwater succeeds Mr. Howell as Supervisor of the Selway, and L. G. Hornsby of the Flathead goes to the Pend Oreille as Supervisor. J. A. Fitzwater and L. C. Stockdale, former Supervisors of the Pend Oreille and Deerlodge, respectively, go to the District Office.

District 2 - Rocky Mountain District

A request for cooperation in working out the problems of range conservation and control on the public domain outside the National Forests has been received from Mr. Hall, County Agent Director for the State of Wyoming. He is very much interested in the plans of the Forest Service and believes that the same ideas should be worked out on the public domain. It is Mr. Hall's plan to put this work upon the county agent force in the several counties as one of their important duties.

The District Office is planning to carry out an extensive postal card campaign to call the attention of visitors to the Forests to the violation of law and the breach of good manners in writing their names and addresses on Forest Service signs.

In many places in the District, visited by large numbers of tourists, road and trail signs have been completely covered by the names and addresses of visitors. The plan is to have the rangers copy the names and addresses of these offenders and mail to them mimeographed postal cards calling attention to the fact that the act is in violation of the United States law and ask their cooperation, on their next visit, in keeping the Forests attractive. This will reach a great number of people who return to the Forests at other times, and who, it is believed, mutilate the signs thoughtlessly. It is hoped that cards calling their attention to the matter will serve to prevent future offenses on the part of a great majority of these people and that they will perhaps assist in spreading the gospel to others.

A two-ton Nash-Quad truck and five Ford touring cars were received by transfer from the War Department during the past week. All of these cars are new and in good condition, but the Ford touring cars are "white elephants" in a sense at the present time because of the recent ruling of the Comptroller that the funds available for road construction could not be used to operate and maintain these passenger carrying vehicles. Plans are being made to store the cars temporarily until some relief can be obtained from the Comptroller's decision.

On the Superior Forest a recent study of the acquisition problem indicates that there is a very large area of natural Forest land now cut over and in the hands of large lumber companies and individual owners. Many of these companies have expressed their interest in effecting an exchange by which they would secure National Forest stumpage in return for their land. Ultimately a purchase will have to be resorted to in order to acquire all of the land that rightfully belongs to the Forest, but it is hoped that an exchange may be brought about which will partly solve the problem. Since about one-third of the Superior is alienated, the matter is more urgent than on the average Forest.

District 2 - Rocky Mountain District (continued)

The disarrangement of lumber shipping conditions and the increased favor which native Rocky Mountain species are finding in the East has made it profitable for the Stevens-Barr Lumber Company, operating in the Arapaho Forest in lodgepole pine and Engelmann spruce, to ship lumber to Philadelphia and New York. One car of the Philadelphia order was so acceptable to the buyer that an order for five cars followed immediately.

Approximately three and one-half million feet of timber within the Martinez Creek watershed on the San Juan Forest was sold this week to the Dyke Lumber Company of Pagosa Springs. Three operators submitted bids for this timber, varying from $3.65 per M ft. to $5.55 per M ft., the price at which the timber was sold. The advertised rate was $3.50 per M ft.

Grazing reconnaissance was carried on during the summer of 1919 on the Montezuma Forest from the middle of May until the first week of October. The area covered approximately 200,000 acres, including the natural grazing units south of a portion of the Dolores River and Roaring Forks Creek. The maps were made on a 2-inch scale and notes made on the types of grazing land in each section.

District 3 - Southwestern District

Dr. Marlow, who lives on the Pecos River, was recently arrested by Ranger C. R. C. Reindorp for killing deer out of season. He pleaded guilty before the Justice of the Peace at Pecos and was fined $50 and costs.

Aldo Leopold has the following to say about the Forest Service uniform as a result of his observations at the recent ranger meeting:

"Several men were wearing the Smith-Gray cotton khaki uniform, which has an objectionable blue green color when new, but this shortcoming is removed through use, as the color fades to a very good gray green. Fechheimer puts out a stronger material of this same class, but experience has shown that it fades badly. One 'fustian' uniform worn by an attending officer looked good, but the color was too far from standard. In purchasing uniforms under present unsettled conditions, greater satisfaction will probably result if samples are obtained just prior to ordering."

Ranger C. L. Warnock, of the Gila, submits the following contribution on the bear question:

"I have never seen a bear kill a cow but submit the following circumstantial evidence for what it is worth.

Late one evening of June, 1918, I was told by a Mexican that he had seen a large bear running a small bunch of cattle on the head of Silver Creek. Early the next morning, I took this trail and in about a mile, I found two yearlings and one cow killed and dragged about fifty yards where Bruin had his feast and piled up these cattle. I feel certain that he had killed one of these yearlings, but one yearling and the cow had been dragged from close to a tree that had recently been struck by lightning.

Late that evening I returned to these carcasses and killed a large grizzly when he came back for another feed.

In May of this year I found a cow with the back broken and Bruin had had several feeds off her. Something had broken this cow's back and there were no other tracks around her but those of a big grizzly.

No lion or wolf killed any of these cattle."

The Tonto Forest contributes the following:

"Speaking of a bear as a predatory animal: While almost enough has been said, we cannot overlook the opportunity to announce that on the evening of Friday, the 26th of September, a miner by the name of Shorty Stephens, on the head of Reynolds Creek, was chased by a brown bear with two cubs. Stephens had his gun with him but he said he could not get his legs to stand still long enough for him to use it."

Norman Skinner, Tucson High School boy, while camped at Mt. Lemmon cabin, on the Coronado Forest, during the latter part of August, killed a deer. A number of his chums joined him in the feast. Skinner was arrested and in company with the other boys was brought before the Juvenile Court. Judge Sawtelle placed him on probation for a year and gave the boys a pointed talk on citizenship and the necessity of complying with the laws of the State and country.

District 3 - Southwestern District (continued)

The Executive Board of the New Mexico Cattle and Horse Growers' Association has been invited by C. F. Forsling, in charge of the Joronado Range Reserve, to take a look at the experimental work now underway on the Reserve, on November 8.

One adult lion kills about 100 deer annually wherever game is plentiful is the belief of Ben Lilly, an experienced hunter, who has 190 mountain lion scalps tied to his belt. Mr. Lilly says that in the spring of the year a mother lion with young will kill a fawn or calf every day.

District 4 - Intermountain District

The American Steel and Wire Company has agreed to furnish the Paradise Cattle and Horse Growers' Association barb wire for the construction of drift fences on the Santa Rosa division of the Humboldt Forest at the contract price at which this material is furnished to the Forest Service. The contract price plus freight charges is but little more than half the local prices for wire.

A wireless telephone demonstration was given last week to the District Office force by Telephone Engineer R. B. Adams. This exhibit was one of the big attractions at the Utah State Fair. For the demonstration in Ogden, two instruments were installed in the District Office building. Conversation was carried on with ease and the tones were remarkably clear and distinct.

Telephone Engineer Adams has gone to District 1, where he will spend the rest of the field season. He does not expect to get back to District 4 until next February.

District 6 - North Pacific District

Water shortages in Portland during the summer months are at an end according to Commissioner Mann, in charge of the water bureau. Construction of flood-gates at Bull Run Lake, Oregon National Forest, is being pressed vigorously. The work was delayed during the summer to permit the men to fight fires.

Reforestation of 100 acres on the Santiam Forest is underway. The area was burned over in 1914. Sixty thousand young white pine and fir trees from Wind River Nursery, Columbia Forest, will be planted. A 12-man crew has been arranged for. This is the first time fall planting has been undertaken on the Santiam.

To camp at night by a creek and to find the creek dry the following morning, was the strange experience of Supervisor C. C. Hall and Forest Assistant H. L. Plumb while locating trails on the Santiam Forest. The creek has been fed by a melting glacier which had ceased to melt during the cold night.

The grazing exhibit, which was the special feature of the District 6 contribution to the Department display at recent Oregon and Washington fairs, has been sent to Salt Lake City for display at the Utah State fair. The exhibit consists of photographs and enlargements showing ranges and methods of range improvement, and mounted specimens of plants which poison stock, including tall larkspur, death camas, lupine, and water hemlock. Jesse L. Peterson, who planned the exhibit, accompanied Mr. Lindstrom to Salt Lake, and will assist in installation of the exhibit and demonstration.

The "fire" feature of the District 6 exhibit at recent State fairs was sent to the fair at Dallas, Oregon at the request of the Polk County Fair Association. The gospel of fire protection was effectively spread by means of the Osborne firefinder, heliograph outfit, portable telephone, etc.

Assistant Engineer F. E. Bonner and Assistant Forester Earle H. Clapp of the Washington office, and District Forester R. H. Rutledge and Forest Supervisor Elers Koch of District 1 attended the convention of the Western Forestry and Conservation Association at Portland.

District 6 - North Pacific District (continued)

That the ranges of the Deschutes and Fremont Forests, central Oregon, have a better supply of winter feed than might be expected, considering the recent drouth and the extent to which they have of necessity been overgrazed during the past three years, is the report of Assistant District Forester Kavanagh, who recently returned from a three-weeks' inspection trip. Early October rains, besides putting out fires, so freshened the range that it is believed winter losses can be kept to a minimum. Mr. Kavanagh reports that cattle are looking better than sheep. Springs which had been depended upon to water stock dried up during the past summer, and so other ranges were overcrowded.

Major A. B. Smith, commander of the airplane forestry patrol in Oregon, reached Portland in time to attend the opening meeting of the Western Forestry and Conservation Association convention, on his air journey through Oregon, Washington, Idaho, Montana, and Wyoming to pick forest-patrol bases. Major Smith stated that fire patrol for the rest of the present season will be carried on in Washington, where fire conditions are worse than in Oregon.

Greetings of welcome by wireless marked the opening of the meeting of the Western Forestry and Conservation Association held at Portland on October 6 and 7. Telephone Engineer C. M. Allen arranged the demonstration, which consisted in Charles Austin, U. S. Radio control officer, speaking from his home six miles distant. Upon the conclusion of his address of welcome Mr. Austin attached a phonograph and the audience heard perfectly the tune "Bubbles." Mr. Allen discussed the possibilities of wireless telephones in fire protection and explained the mechanism of the wireless.

As a further practical demonstration, each person in the convention could hear a voice from Mount Hood, through the contact Mr. Allen had had made with the lookout station for the benefit of the convention. Wireless amateur operators all over Portland, listening in, heard not only the phonograph but also Mr. Allen's explanatory talk and queries by various people in attendance.

Transportation of the wireless equipment to the top of Mount Hood and its installation were shown by lantern slides by Forest Examiner A. G. Jackson. Forest Examiner William B. Osborne, Jr., reviewed the progress made in fire fighting and protection methods, outlined possible improvements, and indicated the trend of the work. A resolution was adopted to cooperate with the Federal Government in providing six airplanes for detection of forest fires in the Northwest, and wireless equipment as a means of extinguishing them. Pictures of Mount Hood and vicinity taken by Mr. Osborne from an airplane were shown. District Forester R. H. Rutledge spoke on the duties of wardens and patrolmen, the kind of men best fitted for such duty, and the equipment needed in their work. An important feature of the program was the Forester's paper on "A policy of forestry for the Nation," read by Assistant Forester A. O. Waha. The paper was well received and highly praised in the discussion which followed. A committee was appointed to prepare suitable resolutions of indorsement; and another, including R. H. Rutledge, George H. Cecil, and Coert Du Bois, to confer with military authorities on airplane forest patrol for 1920. A resolution was also adopted providing for extension of fire protection work by increasing the fund of the Western Forestry and Conservation Association to $25,000 annually.

Lieutenant H.W. Webb was instantly killed and Sergeant John C. McGinn seriously injured on October 7, near Medford, Oregon, when a De Havilan airplane of the forest fire patrol dropped to earth and was destroyed. Crumpling of one of the big wings, engine trouble, and shortage of gasoline, in a country where landing was impossible, caused the wreck.

It was with Lieutenant Webb that M. L. Merritt of this office, made his recent flight over and around Mount Jefferson.

District 7 - Eastern District

That game still exists on the Florida Forest is shown by a report from Ranger McKee, who recently counted 33 wild turkeys in a single drove, and a few days later two fine white-tailed bucks.

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WEEKLY BULLETIN

Forest Service - Washington Office

(Not for publication)

October 28, 1919.

District Foresters' Meeting at Albuquerque

District Foresters and Chiefs of Operation in the various districts will hold a meeting at Albuquerque during the first week of December. The meeting will concern itself largely in questions of personnel organization and finance.

Funds for the Forest Products Laboratory

Concerted action is being undertaken to get proper recognition for the Forest Products Laboratory by the lumber-using industries of the country under the auspices of the Chicago Association of Commerce. Questionnaires have been sent to manufacturers in the hope of arousing the industry to a full realization of the importance of the Forest Products Laboratory, and that the present appropriation of approximately $175,000 is entirely inadequate to carry on the work of the Laboratory in a satisfactory manner. In distributing the questionnaire the committee states that after careful investigation, it is of the opinion that an annual appropriation of not less than $500,000 is absolutely necessary so that the Laboratory may function properly and really do full service to the industries of the country.

Plans for Cutting Timber in Canada

Forestry is finally to be practiced in the woods in Canada. From all accounts it appears that foresters and lumbermen have met and talked and made resolutions for many years on the advisability of doing certain things for the benefit of the forests, but up to the present time in most instances the resolutions practically ended the accomplishment. It now appears that actual action is to begin. It is felt that considerable work of educational value was done in the conferences held during the past 30 years, but no tangible results have been accomplished. The new plan of practicing forestry in the woods provides for experimental cuttings on 500 acres of undersized spruce on the Nipisguit River on lands of the Bathurst Lumber Company in cooperation with the New Brunswick Forest Service.

In carrying out the plans a portion of the area is being cut under the strip system. Strips from one chain wide to three chains wide are cut clean, with strips two chains wide each uncut or lightly culled. A portion is being cut clean in more or less circular patches of various sizes, comprising one-quarter acre to two acres in extent. Other portions are being thinned by cutting to 10, 8, and 6-inch diameter limits respectively. The slash on one-half the area of each cutting system is to be burned and on the other half unburned. The Provincial Forest Service furnishes a forest engineer who, in cooperation with Mr. Lordon, of the Bathurst Lumber Company, will carry out the plans of the cutting.

A similar experimental cutting will be carried on in a stand of 300 acres owned by the Laurentide Company in cooperation with the Quebec Forest Service in a stand of timber mostly culled only for pine. This area is located on Cache Lake, whose waters reach the St. Maurice River at Rapid Blanc. The area contains a peat bog, a merchantable stand arising from an old burn, and mature spruce and balsam in various degrees of mixture with hardwoods, so that most of the types in which logging operations are being conducted in Quebec are represented on this comparatively small area. The Logging Department and the Forestry Division of the Laurentide Company and the Provincial Forest Service will cooperate in carrying out details of the cutting.

Careful record will be made of the cost of slash burning on both areas.

The Commission of Conservation at Ottawa has the task of measuring and recording the results on each of these experimental areas. Sample acres will be laid off and the volume of wood fiber and rate of growth under the present and past conditions will be ascertained and will be used as the standard to measure the results of the various methods of cutting in terms of future growth.

Plans for Cutting Timber in Canada (Cont.)

The investigations will include the effect of cutting to various diameter limits upon windfall, upon diameter increment, volume accretion, upon the growth of the young trees already established in the stands, and the reproduction of the commercial species after the cutting. The areas upon which the slash is burned and those upon which it is unburned will be used for a comparative study of the effects of these two conditions upon reproduction and, in cooperation with the Dominion Entomological Branch, upon prevalence of insect diseases. These areas (burned and unburned) will also be studied in a comparative way by an expert from the standpoint of breeding ground for the various heart rot diseases of spruce and balsam.

This work will be carried on during the logging operations and will doubtless occupy a small investigation party during the coming summer. After that, it is planned to visit the areas periodically for a number of years to measure and record results. In this way only can accurate and useable data be obtained from the experimental cuttings.

A Suggestion for Forest Officers

Foresters in Germany have organized a mutual insurance society to insure against losses of horses and other live stock. At the end of 1918 there were 799 members, and insurance covered 860 horses, 959 cattle, 379 hogs, 99 goats, and 21 sheep, to the amount of 2,206,655 marks.

--Deutsche Forst-Zeitung, March 30, 1919.

Satisfying the Fiscal Agent

Expense accounts covering official travel many times have a hard and rocky road to travel. After the field officer has advanced his good money for legitimate Government business, taken receipts en route from everybody who hates to give receipts, then transcribed these expenditures to an expense form which will satisfy the scrutiny of the Forest Clerk and Forest Supervisor, there still remains the further hazard of an attack by the District Fiscal Agent.

Recently one such expense account was returned to the Forest Ranger with the following notation, "Please give the method of travel from your headquarters to the ranger station and return." The answer was, "I watched my chance and walked both ways."

Big Demand for Ash Timber

Ash timber will be in great demand if the plans of a corporation recently organized in Baltimore materialize. This corporation expects to utilize 30 million feet of ash per year. Mr. Sterrett was recently in consultation with the officers of the corporation. It will require intensive organization on the part of the manufacturers to obtain their full quota of 30 million feet of ash per year, because this amount represents one-fifth of the present annual cut.

Fence Posts in the South

Scarcity of fence post material in South Carolina and Mississippi is becoming such a serious problem that the farmers are really getting rather concerned about it. Good fence post material is very scarce in these states. To meet the situation the Forest Supervisors of the National Forests in the South have been asked to cooperate in the location of black locust supplies in carload lots, in order that shipment may be made in the regions in which the shortage occurs.

Interest in Southern Pines

Management of slash and longleaf pine timber for continuous production on about a 30-year rotation of timber for pulpwood purposes is under consideration by a timber operator, who controls a large tract of yellow pine land situated in the Florida Peninsula. This tract is about 80 miles long and 11 to 13 miles in width.

In all probability Mr. Cary, who is now in the South and has been giving this subject very careful attention for some time, will make an examination of this tract at an early date.

To Remove Stumps on Public Lands

The removal of stumps from cut-over lands in Oregon and California under the direction of the Secretary of the Interior is contemplated by a bill sponsored by Senator McNary and reported out from the committee on public lands last week. The bill reads as follows:

"Be it enacted, etc., that the secretary of the interior shall be, and is hereby, authorized to grant within his discretion free permits for the removal of stumps from cut-over timberlands embraced within the former grant to the Oregon and California Railroad Company and revested in the United States by the Act of June 9, 1916, subject to such terms and conditions as he may impose for the protection of all rights and interests of the United States and such others, if any, that may be affected thereby.

Section 2. That the secretary of the interior is hereby authorized to make any and all regulations found necessary to carry into effect the provisions of this act."

A Chance for Publicity

The International Film Service Company, Inc., 729-7th Avenue, New York City, with western branch offices in Chicago, San Francisco, and Los Angeles, has indicated to the Forest Service that it is on the lookout for good subjects for motion pictures, particularly motion pictures of a spectacular nature.

If Forest officers in the field have advance information of any particular spectacular experiment or other event which will lend itself to use, it is suggested that they communicate with the International Film Service Company, which will at once make the necessary arrangements to cover the event.

Utilizing Eucalyptus Fiber

Utilization of the bark from the large variety of eucalyptus trees found in Australia is reported by a consular agent to have been perfected by a local resident of that country. It is claimed that from the bark of the eucalyptus tree a fiber suitable for the manufacture of twine, rope, and bagging can be made, and that the quality equals the best flax and Indian jute goods at half the cost. It appears that the inventor of the process has been experimenting with the bark for the last 15 years and now has made available for inspection in his factory near Melbourne samples of binder twine, light and heavy rope, and bagging, from which bags for onions, potatoes, wheat, and wool can be made. The manufacturer claims to use every particle of the fiber either in the articles named or as waste for furniture stuffing, fibrous plaster work, packing refrigeration chambers, etc.

The first process of manufacture is to pass the bark through a softening machine which loosens the fibers and then pass the material through carding and spinning machines especially adapted for this purpose. It is claimed that the three main essentials in fiber production--staple of good length, a strong and durable product, and a low cost of manufacture, have been fully complied with in the process worked out. The supply of raw material is practically inexhaustible and if the material produced by the manufacturer will meet the tests it would appear that a fortune awaits him.

Wanted--Photographs

Up-to-the-minute photographs taken on the National Forests are in demand. Almost daily requests are received from editors, writers, and makers of the Sunday supplements for live, up-to-date, human interest photographs of activities on the National Forests. Many new photographs were probably taken by field men during the field season just closing. Don't wait to write up your notebook or postpone sending in the negatives until some time next winter. Do it now, and help in getting some good publicity for the Forest Service.

Just today a request was received in the Washington office for a set of photographs to be used as a spread in a pictorial supplement of one of the eastern dailies. The photographs are to cover vacation opportunities and the material is not to be used until next spring.

If you are a booster for your Forest or your community here is an excellent chance to do something tangible.

Stop and Think

The business of the Forest Service requires thinking on the part of its members. Were it not for this fact we should not have been able to make, up to the present time, the progress we have to our credit. This very act of thinking requires that some of the minor, routine matters be taken care of automatically.

One of such automatic acts is the sending out of publications to the field. Yet even in this instance, some thinking was done in determining the number of copies of publications to be sent to each Forest. Two lists are used in sending out publications, one a general list which provides a copy of the publications for each permanent employee and a more restricted list used for the distribution of publications of technical or limited use.

Both lists, moreover, are built on information furnished from the field. Now, what we are getting at is the complaint recently made by a northern Forest on their receiving a supply of bulletins on a subject in which very little interest exists on that Forest and where the subject discussed is not of any concern in the administration of that particular Forest.

During the past year the Weekly Bulletin has run repeatedly a reminder that excess publications be returned to the Washington office. That invitation holds good at present. Therefore, before expression is given to the thought that some one three thousand miles away is pulling a bonehead, take a few moments' council and try to reach a decision whether the particular event of getting some bulletins in which you are not interested is the result of one of the minor routine acts. At any rate, how was anyone to know that the reading activities on your Forest were so limited? It might have been difficult to pick out your Forest from the other 150.

I If you don't want the bulletins send them back to Washington.

Washington Notes

J. L. Bjorner, who has just completed an extensive trip through the United States, was a recent caller at the Washington office. Mr. Bjorner is particularly interested in securing some of the soft textured oak lumber for furniture manufacture. He spent considerable time with Mr. Sterrett, who furnished him with much useful information. Mr. Sterrett's studies have shown that some of the best textured oak lumber for furniture comes from the trees of the northern states.

E. H. Frothingham finds himself very busy in connection with his job on the investigative program. Up to the present time the program covers 75 large size pages and indicates that there have been 48 contributors to the work. This program when completed will be, in effect, a scientific survey and complete calendar of forest investigative work now under way on the North American continent. The next question is how to get this program printed. It is estimated that it will cost not less than $600 to foot the printing bill.

Washington Notes (Cont.)

Germination tests of slash pine recently made by W. R. Mattoon show that in two weeks 43 per cent of slash pine seed gathered in the fall of 1917 germinated.

Chief of Maintenance B. I. Shannon has left Washington and will make a swing around the circle to accomplish a uniform interpretation of the various instructions dealing with the valuation of permanent improvements.

Assistant Forester W. B. Greeley, who was one of the speakers at the Tri-State Forestry Conference at Indianapolis, has continued on a trip which will take him to the western districts, and bring him to Albuquerque in time for the District Foresters' meeting scheduled for the first week in December.

Forest Products Laboratory Notes

Photographs of the blades of wood-working machinery after the first comparative runs on glued and solid stock showed quite clearly that glue joints injure the knives to a much greater extent than does solid wood.

The essential features which must be considered in building a unit or a battery of water spray kilns have been put together in a circular entitled, "Manual of Design and Installation of the Water Spray Dry Kiln." In addition a set of detailed drawings has been prepared for an assumed installation of 12 kilns for drying green vehicle stock.

The lecture room of the laboratory has been equipped with a motion-picture projector, a lantern-slide projector, and a reflectoscope. These, together with photomicrographs, special demonstration microscopes, and collections of wood specimens, will furnish exceptionally fine aid in the instruction of both University classes and industrial users of forest products.

Miss Matthews referenced 80 articles on the work of the laboratory in the magazines received during September.

The New York Chapter of the American Association of Engineers, after an investigation into the salaries of technical employees of the city of New York, has recommended that advances be made on a scale ranging from 73 per cent for the lowest paid to 20 per cent for those receiving more than $5,000.

E. F. Horn, formerly employed at the Propeller laboratory, now in southern Brazil, writes as follows:

"Brazil is a great deal more prosperous now than two years ago. Cattle, hogs, coffee, sugar, rice and beans are all bringing fine prices, which are contributing to the prosperity of the country.

When I was in Brazil two years ago, I purchased 6,000 acres of fine timberland in the western part of the state of Sao Paulo. My land is located about 6 miles from a railroad station and some 500 miles from Santos, the nearest seaport. I find that land in this section of the country has increased some 400 per cent during the past two years--a piece adjoining mine having been sold for four times what I paid. My land is covered with hardwood timber, chiefly peroba, although there is considerable jequitiba, ipe, aroeira, cabreuva and canella.

There is quite a local demand for dimension lumber for building purposes and for fencing material, and I do not intend shipping any lumber to the coast or to Sao Paulo. I am opening up roads and preparing pasture for mules and oxen. I expect to have ox-carts, log wagons and a sawmill shipped from the states when ocean transportation becomes more certain."

The second lot of Brazilian woods sent to the Laboratory through the Department of Commerce has been kiln dried. This is the last drying experiment which will be necessary, as all the species except Ipe can be dried perfectly for furniture manufacture by the[*] ~~120°-33-per-cent-schedule~~. A milder schedule is to be recommended for Ipe because of its density. The Brazilian woods average about like birch in drying characteristics and requirements.

In cooperation with the National Association of Box Manufacturers, tests are being made on nailed shoe containers. Some of the boxes are of the type being considered for adoption by the U. S. Railroad Administration. The others are boxes which are believed to be more suitable for the purpose than those which have been proposed.

[*] 120°-80 per cent to 145°-53 per cent schedule.

A shipment of flax tow has been received from Crane & Co., Dalton, Mass., who are very much interested in determining the suitability of this material for the manufacture of currency paper. The study is a continuation of several years of research by the Bureau of Plant Industry, with the hope of developing a proper method for reducing the stock. At the present time no linen waste is available, and currency paper is made from cotton, which is very much more inferior to linen for the purpose.

District 2 - Rocky Mountain District

Dr. Carl Hartley, Pathologist in the office of Forest Pathology, Bureau of Plant Industry and Consulting Pathologist for the Forest Service, has recently resigned to accept a position as pathologist with the Instituut Voor Plantenziekten en Cultures, Buitenzorg, Java.

The Denver National Bank is no longer the depository for receipts. In order to carry out the plan to concentrate business in the Federal Reserve Banks, the Secretary of the Treasury has designated the Denver branch of the Federal Reserve Bank as the depository for District 2.

The livestock market improves as the demand for feeder cattle becomes stronger. Weather conditions have been very favorable up to the present. Beet tops are now available, and, while the sugar beet yield throughout several important sugar beet sections of the State has been much less per acre than last year, the total acreage has been greater, and there probably will be as much feed of this class as ordinarily.

Forest officers are contributing to the Producer, the official organ of the American Livestock Association, published in Denver. The editors of this magazine are glad to get Forest Service contributions.

A picnic to celebrate the completion of the Nederland-Ward Road was given on October 26 under the auspices of the Boulder County Commissioners, the Boulder Commercial Club, and the Forest Service. Governor Shoup, Secretary of State James Noland, and Forest Supervisor Wheeler spoke.

Recent examination of the 1919 planting area on the Pike Forest indicates that this has been the most successful season for several years. An average survival of 92 per cent for Engelmann spruce and Douglas fir was secured on the Cascade Creek project on the Pikes Peak Auto Highway. Two-year old seedlings were used; of the spruce 87 per cent survived, and of the fir 98 per cent. All the yellow pine was planted in the South Platte Canon on a gravel soil where erosion is serious. An average survival of 65 per cent was secured.

Forest Examiner Thompson and Lumberman Donery are making an inspection of the Wyoming Tie and Timber Company's sale on the Washakie Forest and securing data for a reappraisal of the unit.

Assistant District Forester Granger and Forest Examiner Paxton are making their first field trip since their return to the Forest Service. Mr. Granger is inspecting timber sales on the Medicine Bow Forest and Mr. Paxton is gathering data for volume tables on the same Forest.

An application has been received from Trinidad, Walsenburg, La Veta, and Aguilar, Colorado, for a combined recreation area which is accessible to all four towns, to be developed by them in cooperation with the Forest Service. The area includes a section of land which has been acquired by the town of La Veta under the Park Act, and La Veta has agreed, if the Service will set aside the area, to reconvey the section to the Government. Already several areas have been set aside for recreation development upon the application of individual communities, but this is the first combined application that has been received.

Committees have been appointed by each of the communities to act as an Advisory Board and the Service will deal directly with a Board composed of the Chairman of each advisory committee appointed by the separate towns. Funds for the development of the area will be raised by direct levy of $\frac{1}{4}$ mill to be extended over a period of two years. Two counties are included, one having a valuation of fifty million and the other fourteen million.

District 2 - Rocky Mountain District (Cont.)

Forest Supervisor H. C. Hilton of the Michigan Forest has been detailed to prepare a bulletin on forest planting in the sand plains region of the Lake States.

District 3 - Southwestern District

Ranger Carroll R. Dwire of the Carson took the active leadership in securing the observance of Fire Prevention Day in Taos and the vicinity. He induced the Board of Education to send letters to various teachers in Taos and the surrounding country, and enlisted three additional speakers, all of whom spoke at two schools in Taos and five schools in surrounding villages. Each school visited had from two to three rooms. Mr. Dwire, in each case, spoke on forest fire prevention and the others on fire prevention in general.

District 4 - Intermountain District

Grazing meetings under the joint auspices of the States Relation Service, Nevada Livestock Association and the Forest Service will be held in Nevada during the latter part of November and early December. A. W. Sampson will represent the Forest Service at these meetings and will give the stock growers in attendance first hand information on overgrazing and range regeneration. C. N. Woods of the district office will discuss the administrative features of the grazing work. Vernon Metcalf, a former member of the district office, who is now in private work and revolutionizing the entire livestock industry in the State of Nevada, is expected to be present at these meetings.

Assistant Forester Clapp spent a few days last week in Ogden discussing, with members of the district office, the research work program. This work was badly dislocated during the war and it is the intention now to put it back on a good working basis.

Tagging of cattle on the Fillmore Forest was a success last season as reported by Supervisor Raphael. Approximately 10,000 head of cattle were tagged. One Forest officer has the record of tagging 500 head in a single day. It has seemed to some Forest officers and to some permittees that there were fewer cattle on some of the allotments where tagging was done than were present in previous years. It is estimated that about one per cent of untagged cattle grazed on these allotments, and since permittees took steps to secure private pastures or made other arrangements to take care of this excess stock as they have never done before, there was very little unpermitted stock on the allotments.

Grazing reconnaissance work on the Sevier and Fillmore Forests is over for the present season and Grazing Examiner H. W. Johnston has returned to Ogden and will now be busy compiling the data secured. Assistance in this work will be by Grazing Examiners Martineau and Malmsten and Forest Clerk Harris of the Great Basin Experiment Station.

The Forest Service exhibit at the Utah State Fair was gotten together by Supervisor Parkinson of the Wasatch Forest. Although handicapped by lack of funds, lack of time, and lack of a good many other things, the Forest Service was able to stage a very satisfactory exhibit. It is stated that there were approximately 90,000 paid admissions to the fair, and Supervisor Parkinson feels sure that a great majority of the people viewed the Forest Service exhibit, tested the wireless telephone, and asked one hundred thousand questions about the features of the Forest Service work.

The possible effect of too early an opening of the grazing season on the regeneration of the forage plants is one of the many subjects under consideration by A. W. Sampson, in charge of the Great Basin Experiment Station. It appears that plants which have been clipped early and frequently have [illegible] greatly degenerated and that it is only a question of time until such plants die. It is the expectation of Mr. Sampson to have a full report on this experiment available for supervisors who are considering a later grazing season.

District 6 - North Pacific District

The tenth annual session of the Pacific Logging Congress was held in Portland from October 8 to 11, inclusive. "The object of the Congress, after all, is to sow the seeds of kindness and to make life a little sweeter and brighter for the boys in the camps. Service is the vitalizing idea of the Pacific Logging Congress," said George M. Cornwall, its secretary, in his annual report. He recommended that entertainment and assembly halls be provided for the camps, that collapsible houses be utilized in the formation of settlements or camp towns, and that the logging companies carry savings accounts for their employees. The technical addresses dealt largely with the application of modern mechanical devices to logging operations. The Congress commemorated National Fire Prevention Day by an appropriate address. A questionnaire calculated to help determine the best methods of fire protection was circulated among the delegates. William Whitfield urged loggers, lumbermen, and owners of timberland to make prompt return to the Treasury Department of the questionnaire issued to forest industries by the Bureau of Internal Revenue, and thus aid the Government in solving the problems presented by the tax on the lumber business. Thornton T. Munger of the District Office read a paper presenting principles of the reforestation program. He brought out clearly the point that if a cut-over area is burned over the first spring or first fall after logging, there is quite sure to be abundant natural reproduction spring up from seed stored in the ground, and if subsequent fires are kept out of the area a new thrifty second growth stand is assured. The "High Class Movie Show" given before the Congress showed the boys of the Twentieth Engineers getting out logs and lumber in France, auto truck logging, accident prevention in California woods and mills, and grazing sheep in the National Forest. Besides members of the District Office, Forest Supervisor Norman G. Jacobson of the Deschutes and Forest Examiners C. F. Erickson and A. A. Griffin of the Olympic attended the Logging Congress.

Lieutenant Kiel, of cross-country flight fame, was an important factor in organizing the airplane forest patrol in District 6. He was assigned by the War Department to permanent forest patrol duty in Oregon in the early part of August, 1919, and he left for the great race from Roseburg, where he had been stationed. Also Lieutenant William C. Goldsborough, injured in Wyoming during the recent race, had been a member of the Oregon airplane forest patrol from its organization, having been stationed at Roseburg before headquarters were moved to Eugene.

Six hundred thousand feet of western red cedar on the Siuslaw, killed by fire 30 years ago, has been sold at $1 a thousand to a shingle manufacturing company at Eugene.

Preservation of fine timber along roadways in the Deschutes region is urged by Fred Lockley of "The Oregon Journal":--"For miles the road leads through a stately white pine forest. You people who are interested in good roads and securing tourist travel should see that this timberland, which is privately owned, is exchanged for other timberlands not adjacent to the roadway. It seems a shame to have the trees along the roadside cut down. It will take 200 years to grow more trees. Already many miles along both sides of the road leading out of Bend they have been cut down and the south-bound tourist travels through a desolate cut-over district. We will awake to the esthetic value of this timbered asset too late, if we do not act at once." Credit for the suggestion is given by Mr. Lockley to the editor of "The Bend Bulletin."

Only the carrier pigeon service will be left at Eugene during the winter. The airplane patrol equipment will be shipped to Sacramento. Lieutenant F. E. Roeder, with three mechanics, will remain at Eugene to care for and train the pigeons. All other officers will fly to Sacramento in De Havilands, their equipment following them by rail.

The Private Forestry Committee, Portland Section, Society of American Foresters, is about to begin constructive study and work looking toward promotion of the practice of forestry on private lands of the Northwest. The following subcommittees have been appointed:--Taxation: Messrs. Brundage and Peavey. Land Classification: Messrs. C. J. Buck, Kummel, and Waha. Public

Acquisition: Messrs. Cecil, Kirkland, Winkenwerder, and Gibbons. Fire Protection: Messrs. Merritt and B. E. Hoffman, Recreation: Messrs. Fromme, Weigle, and Hanzlik, Legislative: Messrs. Brundage, C. J. Buck, Cecil, Merritt, Fromme, and Munger (chairmen of the subcommittees). Publicity: Messrs. Munger and Jackson. It is planned to keep the subcommittees in close touch with each other and with the general committee appointed last May.

Lieutenant-Colonel Hartz, who originated the using of army planes for forest patrol, visited Portland recently on his transcontinental trip in interest of better landing fields. He says that expenditure of $500 should make the Portland field among the best in the country. Colonel Hartz believes that use of bombing planes and chemical bombs in aerial forest fire fighting may save Oregon millions of dollars annually.

B. F. Heintzleman, formerly of the Tongass Forest and now of the Office of Silviculture, Portland, believes that pulp-making may become a great industry of Alaska, where there is abundance of cheap and suitable timber and almost unlimited water power. He says, however, that at present most of the timber sold from the Chugach and Tongass Forests is made into fish traps and salmon cases.

Forest Examiner M. L. Merritt returned recently from inspecting trails on the Olympic Forest, in a wild and beautiful region of northwestern Washington. He reports that Deer Creek Trail, southeast of Port Angeles and 8 1/3 miles long, is nearly completed. It winds through beautiful forests from Blue Mountain and Port Angeles to Deer Park lookout station, in high mountain country, and is a favorite of recreation seekers and an important link in the system of Forest trails. Deputy Forest Supervisor Chris Morgenroth calls it the prettiest trail on the Olympic. The parts leading through rock were easily made by TNT. Deer Park Trail has a wagon grade of eight per cent. Mr. Merritt visited also the Elwha River and Bogachiel trails, of wild-animal-life interest, being favorite haunts of Olympic elk; the Big Quilcene, in the northeastern part of the Olympic, in the Mount Constance region, noted for good fishing and camping; and the North Fork Skokomish Trail, in the southeastern part of the Forest.

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WEEKLY BULLETIN

Forest Service - Washington Office

(Not for publication)

November 3, 1919.

Forests in New Jersey

The annual report of Alfred Gaskill, State Forester for New Jersey, for the year 1918, although much delayed in making its appearance in print, is nevertheless of considerable interest. The following are extracts from the report:

The Forests of New Jersey

"It is necessary to repeat, and to emphasize the statement so frequently made that New Jersey has too much forest, measured by area, though far too little measured by value. The effort of the Division (of Forestry and Parks) is to have converted to agricultural, or other higher use, the land now in forests that is suitable for such purpose, and to give the remainder a greater value. New Jersey can well afford to clear three-quarters of a million acres of forest land; it would then have remaining the 25 per cent of its area in forests which is commonly held to be necessary for the welfare of a State.

This end can be secured chiefly through fire control. Our forests are naturally so vigorous that, given a chance, they easily maintain themselves, not in ideal condition to be sure, but well enough until the people shall have recognized their true value, economic and social. Forest planting is unnecessary, except in a limited way where clearings have been unwisely made, or where the owner prefers to have forests rather than fields. It is important to contest the belief that worth-while forests can be secured only by planting. In this State nature usually will perform the task at far less cost. Chiefly for this reason the Department furnishes no young trees for forest planting, as is done in some states.

The State-owned forests, however, have gained materially within the past ten years. Most of the improvement is due to fire control, and to the increased care that such security induces. Further gains will depend in large measure upon the maintenance and the betterment of the forest fire service.

Assistance to Woodlot Owners

One of the chief efforts of the Division is to help forest owners make their properties productive. Assistance in forest management, in forest planting, in all that is involved in the care of a forest, is given without cost, except for traveling expenses, wherever it is requested. This service has been accepted by many persons this year and the result, especially in portions of North Jersey, is clearly seen in the many ordered forests, and in their increased productiveness. Present lumber prices offer no great encouragement toward the expenditure of money in forest improvement, but an owner who looks toward the future, especially one who considers the aesthetic value of a woodlot, finds that a satisfactory income from the outlay involved is easily calculable.

Markets

The public is well acquainted with the difficulty of marketing agricultural products with satisfaction to the producer; an even greater difficulty is found with forest products, where the quantity available is small and often remote. To meet this difficulty the Division maintains a corrected, up-to-date list of buyers of all kinds of forest products, and is prepared to help bring buyers and sellers together without cost to either.

On the buyer's side the Division is also helpful, as when last winter it found within the State logs for the makers of truck baskets who, because of freight congestion, were unable to satisfy their needs from the South, their source of late years.

Forests in New Jersey (Continued)

Forest Fires

New Jersey now stands well in the van in the efficiency of its forest fire service, though no one knows better than those closely connected with it its defects and limitations. To maintain an organization of 5 State wardens and about 350 local wardens, covering approximately 1,900,000 acres of forest, on a total expenditure, State and townships, of about $25,000 a year, is something of an achievement. That fires are not completely suppressed is quite a matter of course, in view of the exposure, the character of our woodlands and of the people who frequent and live adjacent to them. The experience of 12 years justifies the belief that the fire problem in New Jersey is well in hand. We shall have fires, and serious ones, so long as our woodlands are held in low esteem, and so long as the control exercised by the State lacks the strength which the State Firewarden represents that it needs. The greatest promise of betterment lies in a provision for an adequate patrol of the forested areas during the dangerous seasons, spring and fall. As the State's effort in forestry is predicated upon an effective fire service, there can be no sufficient, or satisfactory forestry or forests, except in the degree that forest fires are prohibited."

Editor's Note: A detailed report on the forest fire situation in New Jersey was made at the same time by the State firewarden, but as the fire conditions in New Jersey are not unusual in character, no extract from the report was made for the Weekly Bulletin.

Tri-State Forestry Conference

At the Tri-State Forestry Conference held at Indianapolis on October 22 and 23, at which the Forest Service was represented by Colonel Graves, Assistant Forester Greeley and Chief of State Cooperation Peters, the following resolutions were adopted:

WHEREAS, the forests of the States of Ohio, Illinois, and Indiana have been practically depleted and but little timber remains in the New England and northeastern sections of the United States. The southern forests, which have been the main source of supply for these three states, will be exhausted within the next decade or two.

WHEREAS, there is a large portion of cut-over timberland on rugged topography and poor soil which is not adaptable to profitable agriculture and which should be growing forests for our future supply. A large part of that which is being farmed will soon be completely lost by erosion.

WHEREAS, the price of timber is rapidly increasing, consequent upon the decrease of the supply.

WHEREAS, the practice of forestry on essentially timberland is discouraged by the present system of taxation. The possibility of an annual cash income from the growing of tobacco and small fruits, and grazing, further discourage forests.

WHEREAS, in the large share of cases it is impractical and unprofitable for private interests to use their land in the growth of timber, since the investment must run for a long term of years. The State can best meet a situation which requires the investment of large funds for many years, through the purchase of public lands for reforestation.

WHEREAS, there are 4,000 wood-using industries in Ohio, Illinois, and Indiana, whose main source of supply was native-grown timber, which, if the present supply is not maintained must perish or move to the source of supply, or bring in materials at a greatly increased cost, the number of employees, the amount of capital invested and the value of the products being:

Employees, All industries-Illinois, 620,000; Indiana, 650,000; Ohio, 600,000.

Wood-using industries-Illinois, 140,000; Indiana, 70,000; Ohio, 90,000.

Capital, All industries-Illinois, $2,000,000,000; Indiana, $675,000,000; Ohio, $675,000,000.

Wood-using industries-Illinois, $400,000,000; Indiana, $175,000,000; Ohio, $160,000,000.

Products, All industries-Illinois, $2,250,000,000; Indiana, $730,000,000; Ohio, $1,785,000,000.

Wood-using industries-Illinois, $320,000,000; Indiana, $140,000,000; Ohio $175,000,000.

WHEREAS, there is a large annual economic waste, due to forest fires, since, in the three states concerned, there has been no system of forest fire protection developed.

WHEREAS, there is great need of an extensive and thorough campaign for the purpose of educating the public to the extremity of the forest situation and the necessity of action.

WHEREAS, the forestry situation and threatening condition of the wood-using industries require immediate action to the end that a policy may be adopted and legislation enacted which will insure a permanent supply of timber, Therefore be it

RESOLVED, By the Tri-State Forestry Conference of Ohio, Illinois, and Indiana, convened at Indianapolis on October 22nd and 23rd, 1919, the Governors of the respective states concurring therein, that the attention of the public and legislatures of the said states, be called to the necessity of legislative action which will lead to the assurance of a permanent timber supply. Be it

RESOLVED, That a system of taxation on timberlands be adopted which will discourage premature and wasteful cutting and encourage forest renewal. Be it

RESOLVED, That the states should greatly increase their forest holdings by the purchase of young second-growth and land adapted to reforestation made possible by a bond issue of 50 to 100 years maturity so the burden may be equally distributed through generations. Urging that large holdings by the states will present a steady and permanent source of supply which will stabilize timber prices.

RESOLVED, That this Conference urges upon our representatives in the Congress the necessity for largely increased appropriations under the purchase clause of the Weeks Act, to extend the area of national Forests, and particularly into the hardwood regions of West Virginia, Kentucky, and Tennessee, from which the three states concerned already draw a large portion of their hardwood supply.

Be it further urged that the federal congress appropriate adequate funds for cooperation with the states in forestry, as it is doing in road building, agricultural extension, vocational education, and other activities, with the especial object of encouraging farm forestry extension under the Smith-Lever Act, reforestation of idle lands and protection against fire. Be it

RESOLVED, That the states launch an extensive and thorough campaign through the press, the schools, the pulpit, and mails, to arouse the public to the need of a State forest policy and necessity of action toward the assurance of a permanent timber supply.

It is furthermore urged that forestry education should be made a progressive part of the public school curriculum.

BE IT RESOLVED, That the work of the Tri-State Forestry Conference [illegible] continue through State forestry educational committees, these committees to be formed independently in each of the three states under the direction of the State official having forestry in charge, and to select for their number three persons each to serve on an executive committee governing the policies of the participating states. Be it

RESOLVED, That the Conference expresses the appreciation of the work of the Governor of Indiana for calling the congress, the representatives of the Federal Forest Service, officers of other states who contributed their presence and papers, the War Department and the New York Commission for the loan of films and the press for their hearty support. Be it

RESOLVED, That a copy of these resolutions be transmitted to the President of the United States, the chairmen of the agricultural committees in the Senate and the House of Representatives, to our repres ntatives in Congress, the legislatures of Ohio, Illinois, and Indiana, the Governors of the said states, to the Forester of the United States and to the president of the American Forestry Association.

Forest Fires in Michigan

Forest fires occurring in Michigan during the present year characterize the fire season as being the worst in years, according to J. A. Mitchell, who has just made an extended investigation of the situation.

At least half a million acres were burned over with a property loss of approximately $300,000. Fortunately there has been no loss of life and the property damage has been remarkably small considering the acreage burned. This estimate of damage does not take into account the potential value of the second growth destroyed or the irreparable damage to soil fertility which in the final analysis doubtless exceeds all other losses combined.

The immediate cause of the breakdown of fire protection in Michigan this year was failure to recognize the potential menace of uncontrolled fire unless forest products or improvements were threatened. This was fatal, for as the season continued the fires increased in size and number until the situation was out of hand and the fires in many places beyond control. Eventually all efforts were necessarily concentrated on the protection of life and property. This is the condition that existed in the four eastern counties of northern Michigan prior to the rains of August 13 and in several of the counties of lower Michigan prior to July 26.

Damage Done

The extent and seriousness of the recent fires can hardly be appreciated without being seen. Throughout the northwestern counties of lower Michigan thousands of acres were laid waste, while in the four eastern counties of the upper peninsula fires burned practically from the Straits of Mackinac to Lake Superior, and from Munising to the Soo. In the hardwood slashings fires in places consumed everything, even the stumps, while on lowlands the humus was frequently burned away, leaving the stumps with roots exposed, resting on the raw mineral soil. In old burns the fires were usually less severe except where second-growth spruce or jack pine had come in. Here the destruction was usually complete. In the swamps the fires often burned to the depth of a foot or more, burning the young trees off at the ground and leaving the tops in a tangle ready for another and a worse fire. In the upper peninsula where extensive drainage operations are under way, fires burned the muck from hundreds of acres of land that was being opened for settlement, leaving a desert of worthless sand in its wake. As much of the soil of north Michigan is light and its agricultural value dependent on its humus content, every fire does more or less damage, the ultimate result of repeated fires being drifting sand or huckleberries and briers, a sure indication of depleted soil fertility.

Existing Conditions

While in general newspaper accounts of the fires were exaggerated, the situation was extremely serious at times and the absence of continued high winds alone saved northern Michigan from a general conflagration, similar to the one that swept northeastern Minnesota in 1918. As it was, strenuous efforts were necessary in many cases to save towns and improvements, and in spite of all that could be done a number of isolated camps and settlers were burned out. The destruction of forest products--ties, chemical wood, logs, and bark--also was considerable and forms the bulk of the loss reported.

No attempt has been made to estimate the value of the second growth destroyed, but it is safe to say that at least one-quarter of the area burned was more or less fully stocked with a thrifty rapidly growing stand of young timber, while approximately one-half had on it a stand sufficient to restock it in time and to form the nucleus of a future forest crop. The rest was chiefly pine plains and brush land on which repeated fires of former years had more or less completely eliminated tree growth.

Causes of Fires

These disastrous fires can be accounted for by

(1) An extremely bad fire season.
(2) Unenlightened public sentiment resulting in carelessness and indifference, and
(3) An inadequate protective organization.

A wet spring served to reduce the number of early fires to a minimum and led to the belief that the season would be a favorable one. There was a heavy crop of grass and weeds on the jack pine plains, which together with abundant summer rains in western upper Michigan and southeastern lower Michigan tended to confine the fires mainly to swamps and hardwood lands.

Within the twenty odd counties included in the fire area, there has been a marked deficiency of precipitation, which combined with temperatures considerably above normal produced extremely critical conditions. This is reflected in a general, complete or partial, crop failure throughout the region affected, as well as by the number and severity of the forest fires. Several years' accumulation of hardwood slash and a stimulated production of ties, tanbark, and chemical wood also served to increase the fire hazard while an unusually open winter resulted in the drying out of swamps. In places also extensive drainage operations served to accentuate this condition. This was especially the case in the upper peninsula.

An unusually hot, dry season, together with conditions resulting from the unregulated harvesting of forest products, and the draining and clearing of land were primarily responsible for the serious emergency through which northern Michigan has just passed. Just such a season, however, may be expected to occur at frequent intervals and the harvesting of the forest crop and the clearing and draining of land is bound to continue as the country develops. The remedy, therefore, must be found in adequate precautions, proper regulation, and effective organizations.

A summary of the 597 fire reports, available August 4, shows that 26.8 per cent of the fires were caused by railroads; 19.4 per cent by carelessness; 13.7 per cent in clearing land; 5.3 per cent were incendiary; 5.2 per cent due to old fires thought to have been out or safe; 4.5 per cent to logging; 3.3 per cent to miscellaneous causes; while 21.8 per cent were classified as unknown. These are not far from the usual percentages and fail to indicate abnormal conditions. The number of fires, however, is far too high and shows the need of aggressive action in several directions.

The old idea that fires do no harm unless they endanger life, or destroy green timber, forest products, or improvements still prevails in Michigan inside as well as outside of the State protective organization. This was largely responsible for the seriousness of the situation this year, since it resulted in carelessness with fire, indiscriminate back firing, and in neglect of fires which might have been controlled if taken hold of in time. The only remedy is education supplemented by adequate regulation.

What is needed is an aggressive campaign under competent direction backed by the whole-hearted support of the protective organization. The importance of educational work can hardly be overestimated, since the success of fire protection depends largely on local support and cooperation. This work should not be confined to the fire season alone but should be continued throughout the entire year, and advantage taken of every opportunity and means of getting it before the public.

Michigan has a locomotive spark arrester law which is satisfactory when properly enforced. The need of closer inspection and stricter enforcement, however, is evident from the number of fires occurring along the railroad rights-of-way. In places also patrol after each train is necessary during periods of extreme fire danger.

The cleaning up of railroad rights-of-way is provided for by law but is not strictly enforced on branch lines and spurs where the danger is usually greatest. Conditions along some of the public highways are equally bad. A step to remedy this was made this year when the State Highway Commissioner ordered that no contractor on a State aid highway should be paid until all slash resulting from the work was properly disposed of. As a matter of fire protection all traveled highways should be cleared up and kept free of inflammable material and the common practice of leaving cut brush along roads should be prohibited by law. Equally important with railroad regulation in the work of fire protection is the proper disposal of slash in woods operations and regulation of the use of fire in clearing land. The present practice in both cases is a menace to public safety and until properly regulated stands in the way of effective fire protection.

The slash disposal problem is one the State has not yet attacked and it is one of the most serious it has to face. With the building up of the country and the increased fire risk the menace of great areas of slash can not be overlooked. It is here that fires start most readily, burn hottest, and are hardest to control. The fire reports for the lower peninsula show that 41 per cent of the fires reported prior to August 4 were wholly or partly in slash, while a survey of the burned area shows that the worst and largest fires were in the wake of recent woods operations. This shows the imperative need of an adequate slash-disposal law. How far such a law should go and what should be required depends on the relative importance to the State of the interests concerned and the circumstances and conditions involved.

The immediate need in Michigan is for a law requiring the disposal, under adequate regulation, of all new slash annually or as it accumulates. In addition, dangerous areas of old slash should be cleaned up or adequately patrolled under State supervision. This is entirely feasible as experience has demonstrated, and no better means of preventing uncontrollable fires can be found. Federal and State aid might well be extended to private timberland owners in clearing up dangerous slashings, since it is primarily a matter of public safety. If it were properly done, the cost would be offset by a reduced fire hazard and subsequent saving in protection cost.

That 13.7 per cent of the present season's fires were due to land clearing operations shows the need of regulation in this direction also. While the present laws fix the responsibility, they do not prevent fires. One of two plans, therefore, is recommended: (1) a closed season to be declared locally by the board of supervisors on the recommendation of the district or county fire warden during which no fires may be set; (2) a law requiring a permit from a local warden or supervisor, to set a fire during the months of April to October, inclusive.

Prize Essay on Forestry

State Forester Chas. C. Deam of Indiana announces a prize essay contest on the subject of "Private versus State Forests." The contest is open to the pupils of all schools in that State. For the best essay from the seventh and eighth grades two prizes of $5 each are to be given, and for the best essay from each of the high school classes a prize of $7.50 will be given. The essay must not exceed 2,000 words and is to be in the hands of the State Forester not later than May 15, 1920.

In making announcement of this contest State Forester Deam states that he is persuaded to do this because of the rapid advance in the price of lumber which is forcibly calling the attention of the public to the vanishing timber supply. Sawmills are disappearing and woodworking industries are compelled to bring in supplies from great distances. The farmers' woodlands are being cleared as fast as possible for grazing and agricultural purposes. The State has not provided State forests and there are practically no municipal forests in Indiana. Mr. Deam further states, "To continue the present forest policy will be disastrous. What shall be done to guarantee an adequate supply of timber for the future? That is the problem to be discussed by the contestants and they are asked to briefly give reasons for continuing a forest area in Indiana; and to discuss the advantages and disadvantages of private owned forests, and, in like manner to discuss State and municipal owned forests."

Christmas Trees

Responsive to the item in the September 29 issue of the Weekly Bulletin, the Editor has received some data and photographs from Ranger Robinson of the Stanislaus Forest. Within 24 hours after receipt of this material, it was already being worked over and prepared for publicity use. It is hoped that other field officers will send some Christmas tree information.

Washington Notes

J. LaFon, for several years a member of the Forest Service and more recently a member of the Tenth Engineers in France, has left for India to assume the duties as Inspector General of Forests. Major LaFon has made a two-years' contract with the English Government and proposes to show them how to use Pacific Coast logging methods in India.

Forest Inspector Carter attended the Appalachian Logging Congress held at Knoxville last week. Mr. Carter was one of the speakers at the Congress and discussed private forestry from the standpoint of the effect forest fires have on the continuation of our timber supply in the southern Appalachians.

G. G. Anderson, after a successful swing around the circle, has returned to Washington.

W. R. Chapline, after four months in District Three, is now back in Washington and busily engaged in putting on paper for the information of the rest of us some of the interesting and important information he picked up while gone.

District 2 - Rocky Mountain District

National Forest Examiner John McLaren of the District office left October 29 for Missoula to serve on the Board of Review of District One.

Forest Supervisor Dwight S. Jeffers has been transferred from the Arapaho to the Uncompahgre Forest and Forest Examiner E. W. Tinker has been assigned as Supervisor of the Arapaho.

A snowstorm did not discourage sixty brave officers from the Forest Service and Bureau of Public Roads from living up to their agreement formally to open the Nederland-Ward Road on the Colorado Forest on October 26. Fifteen road enthusiasts from nearby towns picnicked with them at the half-way point on the road. The picnic had been planned in cooperation with the Boulder Commercial Club and given considerable publicity, but a great number of people from Denver, Boulder, and other nearby towns were prevented from attending by the weather.

District 2 - Rocky Mountain District (Cont.)

While they ate their lunch and were served with hot coffee, the crowd was sheltered by four large tents, which had been erected and equipped with Sibley stoves by Forest officers. A deserted miner's cabin also added to the protection.

The size of the crowd was a disappointment, but the meeting turned out to be a very jolly picnic of Forest and Roads people. The ladies of both bureaus were well represented at the gathering and the whole crowd hopes that the Sunday Road Openings will be continued.

L. H. Douglas, Inspector of Grazing, who has just returned from a trip in Wyoming, reports a new method of helping the stockmen through cooperation with the County Agents. The State County Agent Leader, the Dean of the Wyoming Agricultural College, and Mr. Douglas met at Laramie and formulated plans for assisting the ranchers and stockmen to improve their privately owned pastures.

The County Agent Leader will get his experience and ideas by working with Forest officers, after which he will instruct the other County Agents. They, in turn, will take up the individual cases with the stockmen. The methods will consist in rotation grazing with artificial reseeding where necessary. Later the same system will probably be developed in Colorado.

The shortage of feed in Wyoming, due to the drouth, has not been overestimated in most instances. Assistant District Forester J. H. Hatton says that nearly all of the large owners are forced to market or to ship at least half of their stock to other states for "wintering." The small amount of hay which can be obtained is selling at $20 to $40 per ton.

District 3 - Southwestern District

A reorganization of the Magdalena Game Protective Association was recently effected at a meeting held at Magdalena on October 10. Aldo Leopold of the District Office showed game pictures. State Game Warden Gable also attended the meeting.

The Catalina recreation area on the Coronado is being surveyed into building lots by Forest Examiner H. D. Burrall. The area will be made accessible through the new road which will be completed shortly.

Fire Prevention Day was taken care of by Supervisor Winn through the distribution of copies of an address on forest fire prevention in the State Normal School and Silver City Public Schools. Supervisor Winn was in the field at the time and used this means of getting the fire prevention information to the school children.

Ranger Gillette of the Coconino spent Fire Prevention Day in visiting the public schools of Cliffs, Doney Park, and Winona. He distributed among the school children mimeograph sheets containing a list of questions for them to answer bearing on the care and prevention of fires in the home. Ranger Gillette also gave a 20-minute talk at each school on the detention, prevention, and suppression of forest fires.

Thirty large calves have fallen victims to eagles during the season of 1919, according to Mr. Wiswail, Manager of the Cananea Cattle Company of Sonora, Mexico. The vaqueros reporting the killings in some instances discovered the eagles at work. It appears that in every case the eagles had swooped down and did their killing by picking out two holes at the base of the calf's brain.

More than 1,000 lbs. of loco (Astragalus wootoni) have been gathered by Forest officers on the Coconino in cooperation with representatives of the Bureau of Plant Industry. W. W. Eggleston of the Bureau of Plant Industry, who was a member of last summer's "Livestock Squad" of the State University, desires to use this loco in field experiments to determine the effect it has on stock and, if possible, work out a cure.

On the Coconino a special use permit has been issued to the University of Pennsylvania to excavate and collect objects of antiquity supposedly existing on this Forest. The permit runs for two years.

Stockmen and sportsmen of Reserve, New Mexico, on the Datil Forest, recently held a meeting and appointed a committee to organize a game protective association. Ranger James A. Simmons has been very active in this movement.

District 3 - Southwestern District (Cont.)

The Department of Agriculture Exhibit, which includes a forestry exhibit, will be shown at the Arizona State Fair held at Phoenix, from November 3 to 8. Edward P. Ancona of the District Office will take care of the interests of the Service at this fair.

It is no longer safe to kill tassel-eared squirrels out of season and without a license in New Mexico. The first prosecution in the State under the new game law protecting these squirrels apparently has effective teeth. On a complaint sworn out by Ranger McClure two residents of Fierro, New Mexico, were fined $50 and costs before a Justice of the Peace.

District 4 - Intermountain District

Grazing matters on the Humboldt Forest were considered at a recent conference attended by C. N. Woods of the District Office and Supervisor C. E. Favre and Deputy Supervisor Oscar W. Mink. Conditions of the Humboldt Division of the Forest seem to indicate the need of a reduction of the stock, for it is believed that the range is not able permanently to carry the amount of stock now permitted.

District 5 - California District

Supervisor Tillotson of the Cleveland Forest is now in San Francisco on detail. He will busy himself in the preparation of a report on the forest airplane patrol work of the past summer, and the possibilities for future cooperation with the Air Service in connection with fire observation and use of wireless telephones.

Suggestion is made by Forest Ranger A. J. Berg of the Cleveland Forest that Forest Service bulletin boards containing literature and other helpful information to motorists are more effective if placed at oil stations than in garages. Ranger Berg feels that the motorists are in a better frame of mind while they are stocking up with gasoline and oil than when they bring their machines to a garage or repair station, and thus better able to absorb the information contained in the Forest Service literature.

The largest timber sale of the current fiscal year has just been awarded to the Clover Valley Lumber Company, and involves 234 million feet on the Clover Unit of the Plumas Forest. The prices at which the timber was advertised and which were bid by the company are as follows: western yellow pine and Jeffrey pine, $3.00 per M; white fir, 75¢ per M; sugar pine $3.50 per M. The Clover Valley Lumber Company is at the present time operating in Government timber on the Tahoe Forest, and this purchase is in a measure an extension of those operations.

District 6 - North Pacific District

A study of an extensive defoliation of hemlock and spruce in the Tongass Forest, covering perhaps 200,000 acres, has just been completed by Forest Examiner Jaenicke, of the District office, who recently returned to Portland after a seven weeks' stay on the Tongass. It was found that the damaged areas occur on many parts of the Forest, and that fortunately the larger proportion of the infested hemlock will recover and the spruce damage is negligible. The defoliation is the result of the combined work of saw-flies and moths. The investigation was carried on with the advice of the Bureau of Entomology, which will probably undertake a detailed entomological study next year to supplement this year's data.

An unusually large number of inquiries for oak, ash, maple, and myrtle, which are found in relatively small quantities and scattered stands, is being received by the Office of Products. An effort is being made to get people who have stumpage of this character to enroll in Products so that stumpage holder and prospective purchaser can be brought together.

Recreational opportunities in the National Forests are being given publicity by the Portland newspapers. As a result of a recent trip to Mount Hood the following appeared:

District 6 - North Pacific District (Cont.)

"In the Mount Hood region alone there are thousands of acres of National Forest with every variety of possibility for their use as playgrounds by the people. The Forest Service, with very limited funds and unaided, has built what trails and roads it could. It has done a great deal to help open up this region to tourists. There is much more work for them to do, and of a bigger kind than they have yet attempted, but funds are needed with which to 'carry on.' The people of this State should do everything they possibly can to help the Forest Service, and use what influence they have to bear upon Washington so that the Oregon Forests are given an appropriation liberal enough to do the necessary work. The Eagle Creek trail has shown what the Forest Service is capable of doing, and they are eager to complete trails of this kind all over Oregon."

There is a need for more and better hotels in this region and it was decided that there is no more suitable spot than the present location of Mount Hood Lodge on the north side of the mountain. The hotels will not be elaborate, but simple and comfortable. Chalets built in log cabin style are recommended.

Major A. D. Smith, of the Army airplane forest patrol for the Northwest, held a conference in Portland, October 22, with State and Federal forest officials and private timber owners, relative to the patrol work for 1920. Major Smith will have supervision next summer of patrol in Oregon, Washington, California, and part of Wyoming.

Acquisition

The purchase of 66,371 acres of land in the White Mountains, Southern Appalachians, and Arkansas at an average price of $4.14 an acre was approved by the National Forest Reservation Commission at its meeting on October 31. In addition the purchase of 6,500 acres on the Unaka Purchase Area was conditionally approved. The amounts by Purchase Areas are as follows:

White Mountain	1,560	acres
Monongahela	23,900	"
Potomac	498	"
Shenandoah	735.03	
Natural Bridge	9,895.5	
Mt. Mitchell	1,636	
Boone	1,936	
Nantahala	834	
Savannah	1,303	
Georgia	6,561	
Cherokee	2,150	
Alabama	5,950	
Arkansas	7,262.68	
Ozark	2,060	

The Commission put itself on record as favoring a continuing appropriation of $2,000,000 a year for five years beginning with the fiscal year 1921 to continue the purchase work and stated that until such an appropriation is made it will not approve the establishment of new Purchase Areas.

H. M. Sears and W. P. Kramer recently appraised for the War Department the timber on lands which form part of the Proving Ground at Lakehurst, New Jersey. A unique feature of this appraisal was that the timber to be appraised had already been cut and it was necessary to base the estimate of the amount of timber on the stumps. At that not all of the stumps were left.

W. P. Kramer, of the Pennsylvania Ranger School at Mt. Alto, A. A. Kraus, and I. H. Bernhardt of Cornell have been given temporary appointments as Forest Assistants.

Forest Assistant Frank T. Murphy has been transferred to the Arkansas National Forest.

Acquisition (Cont.)

A. H. McConville, Assistant to the Solicitor, has returned from the White Mountains where he has been working on several condemnation cases on the Chandler, Bean Grant, and Crawford Purchases.

Examiner of Surveys W. H. Sullivan has been detailed to the Monongahela Area to make a survey of the Blackwater Manor tract which comprises three units with a total acreage of 23,000 acres. The Office of Surveys hopes to complete, before winter weather makes field work entirely impossible, the surveys of large portions of the tracts which were approved for purchase at the meeting of the National Forest Reservation Commission on October 31. The conditions of the boundaries of the tracts approved in the White Mountains are particularly favorable to the completion of the work there this winter. This is an unusual situation because ordinarily field work in that region must be suspended at this time of the year.

Work on the compilation of the atlases for the Purchase Areas is now progressing very rapidly, and it is hoped that it will be possible to finish the job by the first of the year. The atlases are almost indispensable for an effective handling of the examination and survey work.

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WEEKLY BULLETIN

Forest Service - Washington Office

(Not for publication)

November 10, 1919.

District Foresters will meet at Salt Lake

The meeting of the District Foresters and Chiefs of Operation will be held at Salt Lake the first week in December instead of at Albuquerque as previously announced. The change in place for the meeting seemed desirable on account of the more central location of Salt Lake in reference to the number of men to attend from the various points.

District Forester DuBois Resigns

District Forester Coert DuBois has resigned from the Forest Service and is now in Washington, D. C., where he has already entered on his new duties in the Consular Service. Colonel DuBois entered the Forest Service as student assistant in 1900. In 1904 he was placed in charge of the section of "Boundaries" -- a division of the Bureau of Forestry, which determined the location and extent of the various National Forests in the Western States. In 1905 he was inspector for the Rocky Mountain and Southwestern districts, and was appointed Associate District Forester for California when the California district was created in 1908, and was made District Forester in 1911 on the resignation of F. E. Olmsted. During the war he served as Major with the 10th Engineers in France, returning a year ago with the rank of Lieutenant Colonel, and the task of aiding in organizing new engineer units for overseas duty. The armistice put a sudden end to this task.

Redington Goes to San Francisco

Paul G. Redington, District Forester at Albuquerque, goes to California as successor to Coert DuBois. Mr. Redington is no stranger in California. He has been active there in Forest Service matters in many different capacities. In 1904, as student assistant, he was engaged in the cooperative work between the State of California and the Forest Service in the study of conditions which formed the basis of the organization of the State Forest Service. Later he was Supervisor on the Sierra Forest and it was from there that he went to Albuquerque. Mr. Redington's return to California is therefore in the nature of a home-coming.

Aerial Forest Patrol

The aerial forest patrol work in California and Oregon has ended for the present season. The success of the work exceeded the expectations of the most ardent enthusiasts. The cooperation of the Air Service was of great value to the Forest Service in its efforts to protect the forests in California and Oregon.

Letters exchanged by the Secretaries of Agriculture and War on this subject follow:

"October 29, 1919.

The Honorable,
The Secretary of War.

Sir:

During the past forest fire season in the West, which has been unusually severe in the Northwest and in California, the Forest Service has cooperated with the Air Service in the use of airplanes in fire detection and suppression. Patrols were operated from Rockwell, Marsh, and Mather Fields, and from temporary bases at Red Bluff, California, and Salem and Eugene, Oregon. Also, as a part of the cooperative plan a captive balloon was maintained at Arcadia, California, for observation.

Aerial Forest Patrol (Cont.)

The desirability of using aircraft in fire detection and suppression was clearly demonstrated by the project. Development of aircraft for this purpose as a regular feature of fire detection and suppression is highly desirable. Its most advantageous features are the speed with which distance can be covered, the large extent of territory visible to the observer, the short period elapsing between the time of detection of a fire and the notification concerning it to the suppression force, the opportunity afforded to survey a fire situation within a short period, and the psychological effect the mere presence of the machine on patrol has upon those who might be inclined to set fires maliciously.

The success of the project was due in no small measure to the spirit and enthusiasm with which the personnel of the Air Service entered into it. This type of observation was new to them and involved for success full appreciation of the character of information needed by Forest officers in meeting the fire situation and earnest cooperation to bring about good team work. I desire to convey to you and to the personnel of the Air Service my sincere appreciation of the Cooperation afforded and of the untiring effort and interest of the Air Service personnel in making the project a success.

Respectfully,
(Sgd.) D. F. Houston, Secretary."

"November 4, 1919.

My dear Mr. Secretary:

I have received your letter of October 29, with regard to the cooperation of the Air Service in the detection and notification of forest fires during the past season. It is a matter of deep satisfaction to the War Department to feel that its officers and men have been able thus properly to cooperate with the Forestry Service in the important work with which the latter is charged. Undoubtedly the men in the Air Service realized the great national interest involved in the preservation of the forests and shared with their associates on the ground the feeling of usefulness which the service entailed.

I am giving myself the pleasure of sending your letter to the Chief of the Air Service, in order that it may be published for the pleasure and interest of all concerned.

Cordially yours,
(Sgd.) Newton D. Baker,
Secretary of War."

Progress in Reclassification

The Joint Commission on Reclassification of Salaries is hard at work and is bending every effort to have a completed job to its credit by January 12, 1920, the date Congress has set for the Commission to hand in its report.

The jobs of the 107,000 Government employees stationed in the District of Columbia have now been classified and grouped in "services." A service is a group of individuals doing similar or substantially similar work in Government employ irrespective of the particular department in which they may be employed. Typical services are librarian, watchmen, messengers, telephone operators, etc.

Recently advisory committees on Sources of Wage Data were organized for each service. Each committee consisted of three representatives from the administrative officers of the bureau, three from the employees, and one from the public. These committees recommended to the Commission sources for wage data of positions under conditions comparable to employment in the Government service. The purpose is to indicate the wages and salaries paid by private employers as against that paid by the Government for similar work.

Progress in Reclassification (Cont.)

The work of the Commission has now advanced to the point of holding hearings at which presentation of facts of salary and employment are to be made by the employees, and the Committees on Sources of Wage Data have been called on to serve as organizers of such hearings on the employers part.

Following out this call a meeting was held under the auspices of the Committee dealing with forestry. At this meeting definitions were adopted defining a "forester" and outlining a scheme of classification of positions. Discussion was also had on the question of salary.

The selection of representatives to present the data at the open hearing and other steps necessary was left to a committee consisting of the Acting Forester, A. F. Potter, the Chairman of the Advisory Committee on Source of Wage Data for Forestry, R. Y. Stuart, and the Chairman of the Committee authorized by the Society of American Foresters, Raphael Zon.

Thunder Mountain Region Now National Forest Lands

The Thunder Mountain region, situated in the high mountains of central Idaho, has been made National Forest land by the enactment of H. R. 1429, which became a law recently.

The lands surrounding this tract have been under National Forest administration for twelve years. The Thunder Mountain region was not included within the National Forests because of local opposition in the past. Within recent years there has been a change in sentiment and on two occasions the Legislature of Idaho memorialized Congress to assume control over this region along with the surrounding National Forest lands. For administrative purposes the lands will be added to the Payette and Idaho Forests.

In making its report, the Committee of the House set forth the following facts:

"The center of a compact tract of mountainous public lands, mostly unsurveyed, known as the Thunder Mountain region, lies 100 miles northeast of Boise, south of Salmon River and west of the Middle Fork of Salmon River. The area is surrounded by the following National Forests: On the north and west, the Idaho; on the west and south, the Payette; on the east, the Challis and the Salmon. It has never been improved or protected under the National Forest laws and regulations. When the surrounding National Forests were created, it is understood that prominent residents of Idaho strongly objected to its inclusion on account of the fact that a notable mining boom was then in progress at Dewey and Roosevelt and it was feared that the application of Government control would restrict mining operations in such a way that desirable mineral development in the region would be prevented. In 1902 this section was the scene of great activity and thousands of miners and prospectors were living in the northeastern part. The boom collapsed several years ago and the population of the entire area of more than one million acres does not now exceed 100 people.

The Thunder Mountain region is a high, rough mountain region dissected by deep canyons. The extremes of elevation run from 3,000 to 9,400 feet. Of the entire area 90 per cent consists of rocky peaks, ridges, and slopes, and approximately 85 per cent sustains a forest cover of mature timber or reproduction, the remaining 15 per cent being barren rock.

The approximate total area is 1,116,500 acres, of which only about 16,500 acres have been alienated, leaving a net area of 1,100,000 acres of public land.

The region is distinctly rough and mountainous with a large majority of slopes in excess of 45 per cent and many of 90 per cent or more. The precipitation varies with the elevation from 15 to 25 inches annually. Above 5,500 feet altitude killing frosts occur throughout the growing season. Approximately 400 acres are under cultivation at the present time. Not to exceed 5,000 acres, or less than one-half of one per cent, have soil or topography suitable for agriculture. Practically the only opportunities for agriculture exist on the benches and bars along the Middle and South Forks of Salmon River where alluvial soils are found at comparatively low altitudes.

Thunder Mountain Region Now National Forest Lands (Cont.)

At present there are no settlements. The log buildings of the first settlement, known as Thunder Mountain and located on Monumental Creek just below the mouth of the West Fork, are still standing for the most part, but have not been occupied for years. The postoffice at Yellow Pine consists of a miner's cabin with no settlers or miners nearer than three miles. The post office at Edwardsburg was conducted by an unsuccessful miner who finally turned his attention to ranching. During boom days Edwardsburg was locally surveyed for a town site but no action was ever taken. The town of Roosevelt was established in 1901 and soon became quite a settlement. Many of the buildings were of sawed timber and substantial in character. It was located on Monumental Creek just above the mouth of Mule Creek. In 1907, however, a landslide down Mule Creek dammed the waters of Monumental Creek and the town is now covered by a lake. The more substantial buildings were caught by the water and are now floating about the lake.

The area is entirely surrounded by National Forests, and for this reason, as well as on account of the topography, it is an integral part of the Payette and the Idaho Forests and is necessary to their satisfactory administration and protection from fire. The three areas are so interlocked that an intelligent and comprehensive plan for the administration, protection, and improvement of the Idaho and Payette Forests demands also the extension of road, trail, and telephone systems through a large part of the Thunder Mountain region.

Conservative estimators state that the region contains fully three billion feet, board measure, of such commercial timber as yellow pine, Douglas fir, Engelmann spruce, and lodgepole pine. The best of the commercial timber lies in the northwestern portion; and, while at the present time it is quite inaccessible, it is nevertheless a forest property of high value. The extensive areas which have been swept clean by repeated forest fires are producing well in lodgepole and red fir. Lumbering is an unknown industry in the region. No commercial mill has ever been run. One man has a small mill on Big Creek where he saws lumber for his own use, and small mills were at one time operated at the Century Mine on Monumental Creek and at Eagle Mines on Big Creek.

It is estimated that a total area of approximately 300,000 acres of timber, having a value of at least $1,000,000, has been destroyed by fires. Protection is necessary both for the timber and watershed. As the result of the destruction of timber along Marble Creek, the high-water period is now at least a month earlier than in earlier days when the watershed was timbered. The fires are reported to have been set at the time of the mining boom, probably in order to clear mountain sides. At present they result largely from lightning and from careless methods of unregulated sheep grazers. Since there is no organization for combating such fires, they constitute a great menace to the valuable timber of the National Forests on the west, which are extremely difficult to protect from their most remote and unprotected side.

A large and important watershed is involved, as the Thunder Mountain region supplies at least 1,000 second feet of water to the Columbia River at low-water period. Reservoir sites are numerous. It is roughly estimated that more than 100,000 horse power could be generated from the waters arising in the area.

The region includes no natural wonders, large lakes, or features of special scenic interest. Deer and trout are plentiful and there are said to be a few sheep and goats.

The mineral resources have been exploited for twenty-five years and the assessment work is still being performed on a large number of claims, but the hundreds of claims which were located during the boom of 1901 have since been abandoned. Some high-grade ore has been found and the general belief is that the region contains an abundance of low-grade ore, the exploitation of which awaits large-scale operations and good facilities for transportation, which do not exist at the present time. The Dewey mines west of Thunder Mountain are still worked spasmodically. Several miners make a precarious living, but most of them depend upon earnings from other sources to secure their supplies. Quite recently there has been development of the cinnabar properties on Fern and Cinnabar creeks and antimony properties near Yellow Pine Basin. One mining company, it was stated, was producing one tank per day of cinnabar worth $105. The antimony mines are also producing a limited amount of metal. In July, 1918, the State Mine Inspector called particular attention to the deposits of these metals in a special bulletin. In his report for 1912, he deplored the inaccessible condition of the country and states that proper transportation facilities would result in a most valuable asset to the State in the creation of new business, as the resources of this section of the State are of such a definite nature both in timber and mineral as to warrant the prospect of building up a labor market worth ten million dollars a year.

The nearest railway points are McCall and Cascade. The former is about 75 miles distant from the area by wagon road, and the latter about 40 miles. There is an automobile stage from McCall to Warren and powerful machines can get as far as the South Fork. At the time of the boom and for several years later there was a fairly comprehensive road system connecting the different points of interest to mining men. At present, this system is deteriorated, grades destroyed, and bridges rotted out until it is practically impossible to travel the country by other means than a saddle horse. Stretches of the old roads remain, but in order to put the transportation facilities of the country on a proper modern basis heavy expenditures would be necessary in reducing grades, restoring bridges, and fixing the remaining stretches of the old miners' roads. The examiner estimates that approximately $400,000 would be needed to open up the country well to modern travel. Furthermore, for suitable protection from fire, trails would have to be restored, and about 75 miles of telephone would have to be built at an early date. The estimated cost of the trails would be $50,000 and of the telephones about $13,000. While these figures seem large, it must be remembered that at one time there was a system of roads and trails which was fairly adequate and that the suggested improvements represent, in part, the depreciation which has occurred through lack of care of the public facilities which existed at one time. The longer the region goes without attention to improvements the greater will be the eventual expenditure necessary to open it up to human use and occupation.

Sheep to the number of nearly 300,000 head have grazed on the area without restriction or regulation during the past year with the result that the watershed is being seriously affected. A fair estimate of the carrying capacity of the entire country has been placed from 75,000 to 100,000 head of sheep. The highest estimate was placed by a sheepman at 150,000 head. As the slopes are steep, overgrazing invariably results in serious erosion.

Officers of the Payette National Forest issued more than 75 crossing permits to sheepmen who desired to enter the Thunder Mountain region in 1918. The country is of such a character that close supervision is absolutely necessary to avoid disastrous overgrazing. The number of sheep going into the country is increasing each year and already the south end of the area is not much better than a dust bed.

The increasing number of sheep grazed each year has alarmed the settlers and the miners and they realize that their surest protection is through regulation of grazing. They are also very favorably disposed toward the possibilities for better transportation and communication which might result if the area were protected like the National Forests.

In 1909 a petition was presented asking for the transfer of approximately 161,000 acres of this area to the Idaho National Forest. Legislation to accomplish this, however, was not enacted. In 1917 the Fourteenth Session of the State Legislature of Idaho, by a vote of 64 to 1 in the House, and 34 to 1 in the Senate, passed a joint memorial addressed to Congress praying for the establishment of a National Forest upon the entire area for reasons set forth in the memorial. During the Fifteenth Session of the Idaho Legislature, a similar memorial was adopted by unanimous vote.

Thunder Mountain Region Now National Forest Lands (Cont.)

The lands within this region are exactly the type which the law contemplates should be included in National Forests. With the exception of a very small percentage of agricultural lands, practically all of which already has been claimed by settlements which would not be adversely affected by this measure, this area is essentially National Forest land. At the present time the timber, watershed values, range, and transportation facilities are being ruined by the lack of protection and proper management. This condition is gradually growing worse as time goes on. Under proper National Forest management, these areas could be utilized by stockmen to the limit of the range capacity and overgrazing would be prevented. No doubt this would result in increasing the number of livestock which the range, in its impoverished condition, can now properly support. Mining operations can be pursued as fully and freely under National Forest management as upon the public domain. Any unoccupied tracts of lands chiefly valuable for agriculture could be applied for by prospective settlers, and listed for homestead entry under the Act of June 11, 1906 (34 Stat., 233). At the same time settlers upon unsurveyed lands could secure, without expense, the advantage of early days, enabling them to submit final proof and secure patent to their homesteads. Protection from fire, and the construction of suitable roads and trails to help develop these natural resources would develop this land into a real national asset where it is now a menace to the surrounding timber on adjoining National Forests."

Lieu Lands in New Mexico

The Commissioner of the General Land Office transmitted to the Forester November 7 a clear list of selections made by the State of New Mexico, embracing a total area of 105,773.15 acres. So far as the State of New Mexico is concerned, this clear list is equivalent to a patent for the lands described and gives the State title to areas selected in place of Sections 2, 16, 32, and 36 within the National Forests, and similar sections outside of the National Forests lost by the State through various causes. A large part of the land selected--probably 75,000 acres or more--is taken by the State in lieu of school lands in the National Forests. This is probably the largest area selected for such a purpose ever embraced in a single clear list. In this connection it is interesting to note that the states of Arizona and New Mexico are pursuing absolutely contrary policies regarding their school sections in the National Forests. Arizona is not selling school sections within the Forests nor is she making lieu selections in place of them. Upon the other hand, New Mexico is selecting lands in lieu of all Sections 2, 16, 32, and 36 within the National Forests, having already utilized practically all her base available from that source.

Land Exchanges in Idaho

State Land Commissioner I. W. Nash, of Boise, Idaho, has had several conferences recently with Forest Service officials regarding the possibility of further exchanges with the State. Some years ago the State of Idaho was given a solid block of valuable timber land from the Kaniksu Forest in lieu of the State's unsurveyed school lands within the National Forests of Idaho. The State now desires to make a similar arrangement whereby it may dispose of its surveyed sections within National Forests, and may also secure a reasonably solid body of land in exchange for the unsurveyed sections in the Thunder Mountain region, which, by special act of Congress, has recently been added to the Idaho and Payette National Forests. The proposition of the State has been favorably received, and the State has been requested to submit a list of its surveyed lands in the Forest north of the Salmon River to the District Forester at Missoula, Montana, and a list of its lands available for exchange in the Forests south of the Salmon River to the District Forester at Ogden, Utah. As soon as these lists are received a plan will be outlined for carrying on the work.

More Chances for Publicity

Forest Service activities furnish good material for motion picture companies. In addition to the International Film Service Company of which mention was made in the Weekly Bulletin of October 28, the following outfits are anxious to get shots at spectacular and other news events in which the Forest Service may be interested:

Pathe News, Incorporated,
1 Congress Street,
Jersey City, N. J.

Gaumont Company,
Flushing, Long Island,
New York.

World Film Company,
130 West 46th Street,
New York, N. Y.

Fox Film Company,
New York, N. Y.

Washington Notes

More than a month ago a fire occurred in the building occupied by the American Forestry Association and as the 40 girl employees had a more or less spectacular rather than dangerous escape, the newspapers made considerable mention of the fire. Unfortunately, an error has crept into most of the accounts, and so the Forest Service housed in the Atlantic Building has received unwarranted publicity. There has been no fire here in the Atlantic Building. We have all gone the even tenor of our way.

Mr. Potter, Mr. Bronson, Mr. and Mrs. Sherman and Mrs. Crocker flew over the city on Saturday afternoon in the Curtis "Eagle," one of the new model passenger carrying airplanes. Mr. Potter says that when airplanes are put on the property list, the Ogden Supply Depot may expect to receive requisition No. 1 from the Washington office.

John J. Jones is now in District 1 as the Washington office representative of the Board of Review which will study the fire problem of that district.

H. A. Smith, Editor, left for the West last week. Mr. Smith will make stops at Madison and Ogden, but his main objective is Portland, Oregon, where there will be a meeting the third week in November of representatives from each district in charge of information, publicity, and exhibit work. Later Mr. Smith will attend the meeting of the District Foresters at Salt Lake.

Colonel Graves will be the principal speaker at the afternoon session of the New York State Forestry Conference to be held at Syracuse, N. Y., on November 11, 1919. The final program just received indicates a busy day for the participants in the Conference. Messrs. Carter and Peters will also attend the meeting.

R. K. Helphenstine, Jr., spent the greater part of last week at Waterbury, Conn. and Mt. Gretna, Pa., inspecting chestnut posts, ties, and poles set in 1913 in cooperation with the Pennsylvania Chestnut Tree Blight Commission.

District 1 - Northern District

Airplane forest patrol in this district next year is a probability and as a part of the preparations a special course of instruction will be given to a number of men from the Forest Service. This course in air patrol work will be given at March Field in California.

Experience in California during the past season has shown conclusively the need of closer cooperation between the men in the air and the men on the ground. This cooperation will require well-trained Forest Service men who

District 1 - Northern District (Cont.)

will be thoroughly acquainted with the Air Service personnel and its requirements, added to a full knowledge of local Forest requirements. The course will cover six weeks' instruction and will provide training in the use of airplanes, radio, wireless telephones, homing pigeons, etc. In addition, sufficient training is contemplated to enable the men from the Forest Service detailed for instruction to read topographic maps, to judge distances, and observe the direction and velocity of the wind at high altitudes. Training is to be sufficient to enable the men to be observers of value for reconnaissance work on large fires.

Tentative working plans have been prepared for the purpose of making a study of the elk problem as it affects the National Forests, especially the Absaroka, Gallatin, and Lewis & Clark. Sufficient funds are not available to put as full a program into effect as desired, but a start will be made with the funds available. The main points to be studied and on which data are desired, are the annual increase in the elk herds, the natural drift, the annual kill, and the loss through natural causes. In order that accurate results may be secured this work will cover a period of years, and will furnish a means of comparison and a basis for a definite elk and game program.

The State has expressed a willingness to cooperate in this study and State Game Warden DeHart is planning on putting a force of men to work in cooperation with the Forest Service.

District 2 - Rocky Mountain District

The run of the fire and recreation cancellation dies used at the Denver and Colorado Springs post offices has been completed and figures on the total number of cancellations compiled. These dies were run on alternate days for a total of 127 days at the Denver post office during which time 26,217,600 pieces of mail were sent out bearing the Forest Service slogans. At the Colorado Springs post office, the dies were only run for a period of 82 days, but during this time, 2,181,860 pieces of mail passed through the machines, making a total cancellation for the two offices of 28,399,460 letters, post cards, etc., impressed with Forest Service wording which went to every office of importance in the United States and Canada and to a great number of foreign cities.

From the number of requests received by the postmasters at Denver and Colorado Springs from commercial associations and business companies for permission to run like slogans on mail matter, the fire and recreation squibs were much more widely read by the public than was anticipated when the dies were made.

Forest Examiner A. M. Cook has just returned from a Weeks Law inspection trip through Minnesota, during the past six weeks, where he covered all the ranger districts. Mr. Cook, together with the Supervisors of the Superior and Minnesota National Forests, attended a meeting of the State Board of Forestry and the Annual State Rangers' Meeting.

Assistant Engineer F. E. Bonner spent a few days in the District Office last week, en route from Ogden, Utah, to Washington, D. C., going over the District road program, reviewing the work done this year, and planning for next year.

Acting District Forester Fred Morrell spent ten days in District Three on the Santa Fe Forest and in Albuquerque making a comparative study of the larger Forest organization in District 3 with those in District 2.

Recreational development on the San Isabel Forest was the subject of discussion at a meeting on October 30 of the Chamber of Commerce and the Rotary Club in Trinidad, Colorado. The Forest Service was represented by Acting District Forester Fred Morrell, Forest Supervisor A. G. Hamel, and Recreation Engineer A. H. Carhart.

The counties of Las Animas and Huerfano are considering the advisability of making a one-quarter mill tax levy for the purpose of developing the mountain playgrounds in the Forest. The city of Pueblo has already started the organization of a One Hundred Thousand Dollar Recreation Association funds, which are to be applied to the development of mountain playgrounds on the San Isabel Forest near Pueblo.

District 2 - Rocky Mountain District (Cont.)

If these projects materialize it will represent by far the biggest development of this kind that has so far taken place in this District, and perhaps in any other district, in the National Forests.

C. A. Neeper is back in the District Office from his extended detail to District 1 in connection with the fires of the past summer.

District 4 - Intermountain District

District Forester Kneipp is back in Ogden from a twelve-day trip to McCall, Weiser, Emmett, and Boise, and found that, although there had been a large sum spent on account of forest fires, the Idaho Forest was the only one on which the acreage burned over was so large as to be alarming, and the only Forest on which the destruction was so complete that a new growth of timber will be needed. All supervisors are agreed that the present season is the worst experienced since the creation of the Forests.

Oak and maple brush from 1 to 4 inches in diameter was recently sold on the Manti Forest. The brush was sawed into 4-ft. lengths and is to be used for smoking meat. The purchaser of the brush will get $8 a cord f.o.b. cars at Ephraim.

District 6 - North Pacific District

A resolution requesting Oregon Agricultural College to do all in its power toward controlling the pine bark beetle, which in Klamath and Lake counties, southwestern Oregon, is said to cause sevenfold the loss that fire causes, was adopted at the conference of Oregon and California timbermen and entomologists, held at Klamath Falls, Oregon, October 21 and 22. Beetle areas adjacent to Klamath Falls were visited.

Airplane patrol of the Fremont next season was discussed as the best protection against fire. An enlarged aerial patrol, extension of trails and telephone lines, and establishment of new lookout stations were advocated to lessen fire hazard. The Forest Service was represented at the conference by the District Forester, Assistant District Foresters Kavanagh and Waha, Forest Examiner Chapler, and Forest Supervisors Brown, Jacobson, and Rankin, of the Fremont, Deschutes, and Crater Forests, from District 6, and by Assistant District Forester Don P. Johnston and Forest Supervisor W. G. Durbin, of District 5. The Indian Service and National Park Service were represented by R. H. Radcliffe, W. G. West, and C. L. Sparrow.

While inspecting sheep range on the Wenaha on October 21, in the Blue Mountains, Oregon, 20 miles from a road, Ranger William Kendall was shot for a deer and seriously wounded. A stretcher was sent from Dayton, Washington, 50 miles away. The wounded man was carried in it for 15 miles, through snow and over bad trails, to Godman Springs, where an automobile awaited. Because of rough roads, bad trails, and snow, he did not reach Dayton till the morning of October 23, and was then taken to the hospital at Walla Walla. After a night's rest his condition improved. The bullet, which traveled a quarter of a mile before reaching him, struck near the shoulder of the right arm, shattering the bone, breaking two ribs, and lodging in the back.

Interesting facts concerning forestry in Sumatra, Dutch East India, were told by E. L. Demmon, while visiting Portland in October. Mr. Demmon was formerly employed on the Whitman and Wallowa Forests and at the Hebo planting area, and for the past two years has been in charge of the Goodyear Rubber Company's plantation at Sumatra. The plantation of which he has charge is as yet an experiment. Most of the rubber exported from Sumatra comes from cultivated trees, the wild product is inferior. Mr. Demmon studies disease control, for benefit of the trees in his care, and hopes also to breed a tree that will yield more than the present average of five pounds of rubber a year. He has no fire problem to solve, owing to the heavy and almost constant rainfall; even during the brief dry season it is likely to rain at any time. Difficulty is experienced in getting the jungle dry enough for the burning off necessary before planting. So damp is the growth that two seasons are required to burn it. The trees bear five years after planting.

A bear-skin, deer-skin, and goat head which Claude E. Greider left in Portland when he quit the Forest Service for military duty were recently shipped to him at Oak Park, Illinois, his present home. On repacking them for shipment, the skins were found to be moth-infested. Mr. Jaenicke, insect control specialist for District 6, prescribed hanging them in open air, brushing them thoroughly, then hanging them in a tightly closed room with lighted candles of formaldehyde. This formula was sent to Mr. Greider, that he may make an effort to save his trophies from the Northwest. Further information, furnished by Mr. Jaenicke, was that had Mr. Greider wrapped the skins in newspapers and dropped moth balls outside the wrappings, they would have been almost entirely safe, because moths hate newspaper ink.

The timber-cruising field season has closed. Five projects, totaling 160,000 acres, were cruised, half of the area for timber sales and half for land exchanges. Eighty thousand acres were cruised on the Deschutes. The Bow River project on the Umpqua Forest remains uncompleted because of a lack of qualified cruisers and compassmen and the restless spirit of laborers, who quit before they had learned the work.

"Oregon Skyline" is the name of the proposed road to be built along the summit of the Cascades, from Mount Hood to Crater Lake, through Oregon, Santiam, Cascade, Deschutes, and Umpqua forests. It will make timber accessible to purchasers and fire-fighters, lessen fire hazard, open grazing lands, increase communication by intersecting all east-and-west roads crossing the Cascades, add inestimably to the possibilities of recreation within the Forests, and give an unsurpassed scenic trip. "The biggest thing in America today for varied and beautiful scenery," Julius F. Stone, of Columbus, Ohio, said of this strip of country between Mount Hood and Crater Lake after he had traversed it. Sites for airplane patrol landings and camp grounds along the Oregon Skyline have already been selected. The State Chamber of Commerce, through its secretary, George Quayle, is credited with initiating this enterprise. Mr. Quale early sought the cooperation of the Forest Service, and has been assisted in his plans by District Forester Cecil and C. J. Buck.

That all Oregon should exert influence which will help the Forest Service get a highway through the Siskiyou to the Oregon Caves, Joaquin Miller's "Marble Halls," is the opinion expressed editorially in the Oregon Journal. This "splendid phenomenon" is 37 miles south from Grants Pass, and at present the last 10 miles must be made afoot or on horse.

Colonel William B. Greeley, now visiting in District 6, addressed the Portland Section, Society of American Foresters, on "Working Plan of a French Forest."

Denny Creek Camp Grounds, on the Snoqualmie, are being further developed and improved by building of trails, addition of tables and stoves, clearing up of camp sites, establishment of a camp for horses, etc. These grounds are on the Sunset Highway, about 60 miles east of Seattle, and are of the same type as the Eagle Creek Grounds, Columbia Highway.

District 7 - Eastern District and Acquisition

As a token of their high esteem for Assistant Forester Hall, members of District 7 and Acquisition, who have been closely associated with him for many years, had a small farewell gathering on Mr. Hall's last day in the office. Presentation of a brief case to Mr. Hall was an incident of this family gathering.

Through his 20 years' connection with the Forest Service, Mr. Hall has been a very effective factor in the progress of the Forest Service in practically every field of its endeavors, and the expression of good will conveyed to Mr. Hall reflects the feeling of the Forest Service at large.

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WEEKLY BULLETIN

Forest Service - Washington Office

(Not for publication)

November 17, 1919.

DISCUSSION OF THE PROGRAM OF FORESTRY

At the Syracuse meeting on November 11, Colonel Graves cleared up a point in regard to which there has been considerable misunderstanding. He was asked by Dean Hosmer, of the Cornell Forest School, whether he had not changed his position in regard to the mandatory practice of forestry by private owners, and he immediately replied that he had not changed his ideas at all but had changed his form of expression of them; that there is no difference in practice between requiring owners to keep their land productive and prohibiting practices so destructive as to prevent continued production. He stated that he had found that his exact position was more readily understood if the approach were made from the viewpoint of prohibiting destructive processes than when the approach was from the viewpoint of requiring that reproduction be secured, although the two expressions mean the same thing in application.

Saved from Bankruptcy

A narrow escape from going into bankruptcy is the experience of the Forest Service. The deficiency bill, which carried several million dollars for the Forest Service, has at last become a law and the fiscal agents have been able to send us our pay in time to keep us out of the poorhouse. The bill became a law on the expiration of the ten-day period after its presentation to the President, who failed to sign on account of his illness.

Taking Stock

The 1919 fire season in District 1 is now over and the time for taking stock is at hand. This will be done by a special board of review which is to consist of nine men with wide experience in the fire game. The board is to be made up of three Supervisors of the District, three members of the District office, and three experts from the Washington office or from other Districts. The object of the investigation is to get at the bottom of the fire problem in District 1, to find out what happened, how it happened, and why it happened. It is expected that the board will be able to work out an improved method of fire protection and one that can successfully meet the situation existing in District 1.

As a preliminary to the actual meeting of the board, which will be held in Missoula later, the various members will make extended field trips and study the conditions on the ground. The nine members constituting the board will visit a certain number of the Forests and the itinerary has been so worked out that not less than three days will be spent on each Forest in the study of the maps, reports, and other written records of the fire season, and in conferring with the Supervisor, Deputy, Fire Assistant, and Clerk. The remaining two days will be given over to a conference in which all other officers who have participated in forest fire fighting will take part.

The points to be considered in detail are:

1. Fire Plans. What is the Forest doing or planning to do toward development and perfecting of fire plans? Are statistical records, maps, and charts of past fire seasons so compiled and kept up to date that it is possible to analyze results of fire protection in the past? Have fire plans been made up and filed without bringing them up to current usable form? Was a fire organization map furnished to all protective men?

2. Examination of fire time slips. Do they indicate excessive hours or possible time sweetening? Is this particularly true of certain crews? Who was in charge of those crews? Were standard rates of pay followed? If not, what was the reason for variance? What was the average daily rate of pay for each class of men paid by the hour?

Taking Stock (Continued)

3. Personnel. Were the best type of men obtained for guards? If not, why why could they not be obtained? Does the class of men we want exist? If so, how can we get them? What type of man do we want? What can be done in the line of training temporary men?

4. Location and distribution of men. Is the proper balance in the number of lookouts and smokechasers maintained? Has the lookout system been analyzed by mapping the seen and unseen areas? Are the lookouts located by guess and precedent or by thorough analysis of all available points? Are the smokechasers properly located and properly grouped?

5. Time records on fires. Go over the elapsed time record on all fires. Discuss with the rangers all cases where time of report, start, or arrival at the fire is unusually long. Have the men on the forest been properly impressed with the need for quick initial action, and the clipping of minutes? Were all smokechasers equipped with previously prepared packs?

6. Analysis of large fires. The detailed inquiry should cover in general all class C3 fires, but may cover smaller fires where points of particular interest may be brought out.

Washington Notes

Paul D. Kelleter left yesterday for Portland, Oregon, for the meeting of the district representatives in charge of information, educational, and exhibit work, which will be held the latter part of the present week.

C. E. Dunston, Forest Supervisor of the Lassen Forest, California, is in Washington on an extended detail.

Forest Products Laboratory Notes

Nils B. Eckbo, who recently resigned from the Forest Service and is now on his way to Africa to his new job, writes the following:

"Still in London and with the railroad strike going full blast it is difficult to say when I will be able to go on.

I have put in my time running about getting a line-up on the kiln drying situation in England. By the way, they all pronounce kiln with a long n here.

It is the hardest thing in the world to get the information one desires in England. Even the most commonplace thoughts are held tight unless gently approached through the proper channels.

Mr. Boas expressed it pointedly when he said that he could get more information in the States in a half hour than he could get here in a week.

Kilns used are predominately Sturtevant, with fan and radiator located outside the kiln.

The time required to dry various woods seems very short. This is due to a large extent to the fact that the initial moisture content is usually fairly low and that the final moisture content does not go below 15 per cent.

District 1 - Northern District

Grazing reconnaissance work on the Beaverhead Forest was continued throughout the entire field season in spite of the extremely bad fire situation prevailing in the District. Topographic mapping was carried on on the Wise River Division. During most of the season two crews operated and they were able to cover an area of approximately 505,000 acres.

The Jerry Creek Division comprising approximately 39,000 acres was typed in September, in order to get an idea of the range existing in District 1 on which it will be possible to base future reconnaissance typing work.

The Wise River Division will furnish enough mapped area for a typing crew next season and by the close of next year approximately one-half of the total Beaverhead area will be covered.

District 2 - Rocky Mountain District

To have his private automobile ready for the scrap heap is the experience of Supervisor Sweitzer as the result of using it for official trips. All this is due to a collision with another car while on a trip on the Rio Grande Forest. Mr. Sweitzer escaped without serious injury although several of the other occupants of the car were less fortunate.

The Ranger Examination held on October 27 was taken by 98 men in this District.

B. I. Shannon, Chief of Maintenance, of the Washington office, has been in Denver during the past week discussing the improvement working plan, the improvement inventory, and the revision of the form of allotment estimate sheets.

Timber sale receipts in this District for October were next to the highest ever received for any one month. The total to date for the present fiscal year is approximately $44,000 in excess of those for the same period in the preceding fiscal year.

The chief timber sale activity is in the tie region in Wyoming and on the Black Hills and Harney Forests, South Dakota, from which lumber is largely shipped into the middle west general market.

Assistant Forester Greeley is expected here November 11 for a discussion of various silviculture problems.

The headquarters of the Fremont Experiment Station will be moved to Colorado Springs about January 1. It is believed that the change will make an improvement in living conditions for the personnel and will have a marked effect on the general effectiveness of the work.

Fireplaces and sanitary conveniences were constructed on the Florence and Pueblo recreational areas in the San Isabel Forest last spring. At that time, it was planned to develop this area on a five-year basis, but this season's development work has proved so popular that the improvements fall far short of meeting the present demand. Accommodations for about 80 people were provided, but as many as 800 cars were on the area at one time. This development on the Florence and Pueblo areas has aroused a good deal of interest and people in southern Colorado are clamoring for recreation development of the San Isabel Forest sufficient to take care of their tourist guests.

Two recreation associations have been organized to meet this popular demand. The northern organization, with headquarters at Pueblo is known as the San Isabel Public Recreation Association, and the southern one with headquarters at Trinidad, Colorado, is called the Spanish Peaks Mountain Playgrounds Association. These two associations are to cooperate with the Forest Service to further the recreation development of the San Isabel Forest. The Pueblo organization is a corporation formed to operate without pecuniary profit to stockholders. All profit made by charging reasonable rates in any of their camps or hotels will be turned back into a fund for further recreation development in the Forest. The Association is also empowered to own, buy, sell, or lease real estate and may enter into a number of activities in relation to recreation such as running stage lines, pack trains, hotels, places of amusement, stores, and any utility which may be desirable in their development plans. It is capitalized at $100,000 at $5 per share, each share a voting unit and no limit to the amount that any individual may hold. In reality the shares are a donation to make capital on which the association can operate, no stockholder receiving any benefit except as the whole community will be benefited. In the case of the southern association, the counties have voted a tax which affords finances for development work. The association itself is merely an advisory body which will cooperate with the Forest Service in spending this money on such things as camps, tent colonies, or hotels. The association rather than the county will receive the profits made and it will be spent in further developments.

A meeting of two committees, one from each association, was held recently and a form of cooperation worked out whereby the associations will assist each other along several lines of common interest, such as buying supplies in quantities and organizing a publicity campaign.

District 2 - Rocky Mountain District (Cont.)

This is probably the biggest cooperation in the way of recreation development that has ever been effected. Colonel Graves was present at one of the meetings which led directly up to this organization; other meetings have been attended by Acting District Forester Morrell and other members of the District office. A great deal of credit for the success of this organization is due to Forest Supervisor A. G. Hamel of the San Isabel Forest.

District 3 - Southwestern District

Forest Examiner H. D. Burrall is surveying lots in the Catalina recreation area on the Coronado. The new road to this area will be completed this fall, and will make accessible one of the finest recreation areas in the West.

A Cloudcroft banker, owing to an irresistible impulse, killed a turkey out of a bunch that persisted in hanging around his hunting camp established the day before the season opened. By an apparently equally irresistible impulse he gave himself up to the Game Warden.

The following note was found pinned to a tree on one of the Forest Service campgrounds on Cave Creek, on the Coronado, in Ranger Schoenberg's bailiwick:

"The most wonderful time of my life was spent in this camp. Was well worth coming all the way from Anacostes, Washington, 100 miles north of Seattle. Hope I can come again."

Ray M. Potter, of Clifton, Arizona, who assisted several years ago in constructing the first Forest Service wireless line, has recently built a wireless telephone outfit in Clifton, and has requested that the District telephone engineer investigate the feasibility of converting our present wireless station at Baseline and constructing another station in the Blue Range, both to be of the wireless telephone type.

The area burned over in the Baker's Butte fire on the Coconino in June was recently examined by Forest Examiner Lessel, and an estimate of damages made. The area of the fire on the Coconino was 1,040 acres; the damages, including timber, reproduction, and forage, $1,700.00. The cost of extinguishing the fire was $1,525.00.

The Forest Service is starting work on the Potrero Canyon loop road on the Coronado which will make the Potrero Canyon picnic grounds easily accessible to the people of Nogales, and will incidentally give them a fine scenic drive.

The Tijeras Canyon loop road, which is to be rapidly pushed in the future, will give the city of Albuquerque a fine mountain recreation area.

Great progress has been made on the Pecos River road, which will serve all northern New Mexico in making accessible the high Pecos country.

Money has been spent on the Santa Fe Canyon road, which will give the people of Santa Fe a good place for Sunday picnics.

These are some examples of what can be done by the Service to help communities develop summer resorts. It is only a start after the enforced inactivity during the war.

The district's first requisition for printing on the Government Printing Office, Washington, has been filled. It consists of a supply of road and trail requisition blanks. Approximately three months elapsed between the time of placing and filling the order.

The Forest Service is handed a bouquet in the October 18 number of "The Country Gentleman," in an article by G. F. Stratton called "At the End of the Old Texas Trail." Speaking of the huge increase in the last twenty years in the number of cattle and sheep grazed on the open range of Wyoming, he says:

"The Forest Reserve Act has done as much to secure that increase as any other one factor. When that act was passed and the field rangers commenced to get out and enforce the regulations, they excited fully as much savage opposition and denunciation from the stockmen as the sheepmen did when they first cut in on the cattlemen's ranges. Now - well, the most impressive way of continuing that 'now' is to state that a great convention of cattlemen and sheepmen of all the range states is to be held in Salt Lake City to discuss the urging of immediate action by Congress in placing all open range under the same control and regulation as the forest reserves. This would be an endorsement of methods and results unprecedented in the history of any other government department."

Since this was written, the Salt Lake Conference has advocated control of the unappropriated public domain by the Department of Agriculture.

The approach of winter is a good time to reflect on those indispensable jobs of "puttering" that every Ranger Station needs.

Good boards often make good buildings, but all the improvement boards, inspectors, and architects ever invented can't make your station an asset instead of a liability unless you help.

Do any of the following items sound familiar?

1. An old shed of the painted iron or prehistoric pole age that gets under foot when you try to walk to the new barn. You might move it to a less prominent part of the landscape and work it over into a chicken house, or have it condemned.

2. A yard that looks like the slopes of Old Baldy after a cloudburst. If you can't spare time to level it off, maybe the Supervisor could scare up a few dollars to help you out with a man and team.

3. A spindly flag-pole with a decided lean toward the northeast. Possible treatment - a new pole, a juniper stub, some paint, a plumb-line.

4. A sag in the yard fence on a bee-line to the corral. Perhaps you need a new gate there.

5. One of those well-known "Texas" gates that make the D. O. man curse softly when he calls. Further comment unnecessary.

6. A corral resembling Mormon Lake at low-tide, when a few loads of gravel and a little heady ditch-digging might solve the problem.

7. A station site that looks like the dry farm of a homesteader on military leave. A few native trees and shrubs would give pleasure to the eye, not to mention shade and shelter for you or the man who follows you.

8. Some old appletrees that to all appearances might be on a goatman's home range. How about a little first aid in the form of pruning, cultivation, and fencing?

9. Unpainted shacks, loose boards, and other little things too numerous to mention. Fix them.

Don't think that because your station looks like a wreck, you'll get a lot of improvement money. Funds are likely to be allotted where there is reason to believe that they will be well spent. Evidence of willingness and ingenuity will help your credit with the improvement man.

Don't overlook any real needs or hesitate to offer suggestions, but also use judgment and don't ask for an allotment if you can do the work yourself at odd times. Just do it.

As the punster would put it, good quarters, built with good sense, save dollars.

Plywood sign boards recently received from the Madison Laboratory will be experimented with in this district during the coming year. These boards are extremely light and consist of a light core with a thin sheet of veneer on each side. They will be painted at the sign shop to be operated this winter and will be put into use on the Santa Fe Forest.

That seed production of young western yellow pine is greatly stimulated by cutting is indicated by recent studies at the Fort Valley Experiment Station. Areas cut under Forest Service supervision ten years ago bear 40,000 to 50,000 seedlings of 1919 germination per acre while similar cuttings made within the last four or five years bear usually less than 10,000 per acre. Timber-right sections cut by the Saginaw & Manistee Lumber Company from five to ten years ago and now bearing less than ten poles per acre of diameters ranging from eight to fourteen inches, have about 3,000 first year seedlings per acre, and where more trees are left the number of seedlings is much higher. Similar cuttings made within the last five years, and before the heavy seed crop of 1918 have practically no seedlings. The explanation for these differences is that young trees are shaded considerably in virgin stands and therefore produce negligible quantities of seed, while the same trees five or more years after being released by cutting are able to produce seed in considerable quantities. These conclusions are supported by observations of the relative cone production of trees below fifteen inches in diameter during the heavy seed year of 1918.

In memory of Charles E. Simpson, the Taos Ranger Station has been renamed the Simpson Ranger Station. Ranger Simpson died while on his way to France as a member of the Forest Regiment.

Active cooperation on the part of his agents has been directed by Extension Director E. P. Taylor of the University of Arizona in the drawing up of forage plans with Forest officers. Similar cooperation of their county agents has also been called for by the State College of New Mexico.

District 4 - Intermountain District

The Forest Service register placed at the summit of the Bitterroot-Big Hole road shows a total of 2,323 registrations, which represents approximately 580 cars. This register was available to the public for a period of 3½ months, from May 15 to September 1.

Of particular interest is the fact that 33 states are represented on the register. Montana, of course, leads. The local people passing over the road register but once each season so that the total figure of registration is not made up of an unduly number of registrations by local residents who happen to pass to and fro on this road at frequent intervals.

District 5 - California District

P. F. Lockhart of Edgewood was convicted in the Justice Court at McCloud for two violations of the Game Laws and fined $100 for each offense. Lockhart was charged with having killed six deer during the open season and neither hide nor horns had been retained for a period of 10 days after the close of the deer season. The arrest was made by Deputy Fish and Game Commissioner J. S. White and Forest Ranger J. H. Stone of the Shasta Forest.

District 6 - North Pacific District

The success of approved methods of Douglas fir logging has been demonstrated on a cut-over area of the U. S. Logging Company sale, Row River watershed, Umpqua Forest, according to Forest Examiner A. G. Jackson, who inspected it recently. Seedlings of from one to four years average several thousand trees an acre. Four-year-old trees range from 20 inches to four feet in height, some of the larger ones showing a height growth of 20 inches for the year. While some of the trees left standing for seed have blown over, the area is so well stocked with vigorous young growth that their loss will not be felt. The trees are propagating themselves. Burning of slash immediately after cutting uncovered mineral soil needed by the sprouting fir seeds. Logging operations have been carried on here since 1913.

The law against refusing to fight forest fire when necessary, enacted in the Oregon legislature during January, 1919, had its first enforcement October 27, when Thomas Lawson was fined $100.00. Lawson remained at the threshing machine when the crew to which he belonged had been summoned by Deputy Forest Supervisor Irwin to help put out a bad fire. Mr. Irwin 'phoned Lawson that he was seriously needed, and also went into the field in person to induce him to fight fire. Failing in this effort, the deputy supervisor swore out the warrant which resulted in the fine. The other men of the threshing crew had responded readily. "After Lawson's arrest we had no trouble getting men to fight fire," said Supervisor R. M. Evans, who told the story during his recent detail in the District Office.

District 6 - North Pacific District (Cont.)

That lumbermen may better understand the 36-page questionnaire which they are to file with the federal tax collector by December 16, meetings have been held at various points in western Oregon and western Washington at which officials of the timber section of the Internal Revenue Bureau have made explanations and answered questions. W. T. Andrews, timber valuation engineer of the Bureau and formerly logging engineer of the Forest Service, represented the Government, and C. D. Moore, cost accountant and tax expert of the West Coast Lumbermen's Association, represented the industry.

The Chugach Forest in Alaska records 19 kinds of special uses, those most characteristic of the country being canneries, fox ranches, herring pounds, fish salteries, road houses, whaling station, and net rack; an aerial tramway is also included.

Douglas County's share of the timber of the Oregon Cascades is to be advertised, with a view to developing the local lumber industry and in connection with other Nation-wide advertising for Oregon. Supervisor S. C. Bartrum, of the Umpqua Forest, is a member of the committee which will plan the campaign.

George Haddon, a returned soldier, is assigned to the Snoqualmie Forest, Darrington ranger district, for training preparatory to a course at the University of Washington to fit him for Forest Service work.

That tourist hotels could be maintained profitably on many sites in the National Forests of District 6 is the opinion of those who have made investigation. Along Eagle Creek trail three such spots have been specially designated. One is located four and one-half miles southeast of the Columbia; another ten miles further along, at Wahtum Lake; and the third at Lost Lake, ten miles south of Wahtum. From the first it is hoped to build auxiliary trails. There is room here for a central dining room surrounded by bungalow tents or log-cabin huts. The next hotel probably could be kept open year-long, since the patronage of sportsmen frequenting Wahtum Lake at all seasons would be considerable. Lost Lake, where the third hotel might well be located, has been much photographed, partly for the sake of the beautiful image of Mount Hood, which it mirrors. The Forest Service is building an automobile road which will make it accessible from Portland by a few hours' drive. It seems probable that a hotel here, under special use permit, would be a paying venture.

A bone pricking through melting ice on the summit of Mount Hood so interested G. C. Maronay, Elija Coalman's assistant at the Mount Hood lookout station, that he wrenched it loose to examine more carefully. As he un-iced it, other bones and still others appeared, until he had 44 collected. He worked on, trying to find the head; but summer ended, the ice hardened like adamant, and the effort was given up, to be renewed next summer. Maronay brought the bones to the Bureau of Mines and Geology, Portland, where they were examined by four geologists, who stated that the flesh of the animal had totally disappeared before the skeleton had been imbedded. The state geologists seemed of the opinion that the bones are more likely of a moose than of an elk. Professor H. B. Torrey, of Reed College, thinks them too frail for moose bones and believes the animal to have been a species of elk. He did not explain how the elk, which habitually remains at an elevation of about 4,000 feet, reached 11,000 feet. The principal mystery is how so large an animal got to the top of Mount Hood. Further study will be given the relics--consisting of two leg bones, two shoulder bones, a hip bone, a bunch of ribs, vertebrae, a sample of horn (or hoof), with hairs and "various other bits of evidence." At present the collection is in the Portland office of the Forest Service. The bones were found near the spot where Lookout Elija Coalman had his tent before the lookout house was constructed.

Fox farming, familiar to officers of the Chugach and Tongass Forests, where it thrives on special-use sites, is increasing so steadily as to indicate that eventually it will supersede trapping as the principal method of supplying furs.

District 7 - Eastern District

Special cancellation dies bearing fire and recreation slogans for use in the post office at Asheville, North Carolina, will soon make their appearance. The commercial organization of Asheville called on the Forest Service to use its "influence" with the Post Office Department to authorize the use of special dies. The matter was taken up as requested and received the approval of the Post Office. The dies cost $20.00 each and will be paid for by the commercial organization.

Chestnut blight has spread more rapidly during the past year on National Forest land on the Natural Bridge Forest than at any time during the past six years. In 1912 only a few infections were found and in only one case did the infection cover more than a single tree in one place. It is now possible to find infections on almost any part of the Forest. These infections are no longer confined to individual trees and there are several places where almost every tree on one-fourth acre plots are infected. Steps are taken to sell the blight infected trees, when this is possible, and it is hoped that in this way we may be able to somewhat retard the spread of the disease. An infection was found on privately owned land north of Lynchburg four years ago and no steps were taken at that time to cut the infected trees. The same area was inspected about a month ago by Mr. Gravatt of the Bureau of Plant Industry, and it was found that over 50 per cent of the trees are now infected. He also reported that advanced infections were found along the State line between Virginia and North Carolina. The Bureau of Plant Industry is conducting experiments to develop a blight resisting species or variety of chestnut. From present indications it seems that within a period of ten or fifteen years at least 50 per cent of the chestnut trees will be infected. This is of special importance in our timber regulation plan as well as to local industries. Tannic acid plants in this locality with a total annual consumption of approximately 180,000 cords of chestnut wood are beginning to feel concerned about their future supply. Within the National Forest 60 per cent of the merchantable timber by volume is chestnut.

Three Interesting New Members of the National Forest Family

District 7 will soon find itself the proud guardian of three brand new National Forests which will be created in the near future from the lands purchased in the southern Appalachians under the Weeks Law. The names selected, Nantahala, Unaka, and Boone, for the christening of these new members of the family are peculiarly interesting and appropriate.

Nantahala and Unaka are both Cherokee words, Nantahala (Indian spelling Nundeyeli) meaning midday sun and so named because the sun only reaches the river gorge in this region at noon. The name Unaka (Indian spelling Unega) or more properly Uneguni, means "where it is white," and was applied by the Cherokees to the highest points of the Great Smoky Mountains between North Carolina and Tennessee, in allusion to their hazy appearance, expressed by the white man's designation of "Smoky."

Boone was a particularly happy choice for the name of the Forest which includes within its boundary one of the masterpieces of the southern Appalachians. It is one of our national characteristics to wish to pay tribute to such a pathfinder as the valiant, redoutable Daniel, and surely no more appropriate monument could be dedicated to the memories of his rugged virtues than this piece of nature's handiwork.

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WEEKLY BULLETIN

Forest Service - Washington Office

(Not for publication)

November 24, 1919.

We are Classed as Miscellaneous Engineers

A meeting of the different classes of engineers employed by the Government in the District of Columbia was held at the office of Mr. Grover, Chief Hydraulic Engineer of the Geological Survey on Tuesday, which was attended by Col. Graves, Mr. Merrill, Mr. Zon, and Mr. Potter. The purpose of the meeting was to discuss the duties and qualifications of the different grades of engineers which had been decided upon by the Reclassification Commission, that body having signified a willingness to consider modifications or amendments to the same.

There are 20 different classes of engineers employed in the Government service, the Foresters being classed as one of the kinds of miscellaneous engineers. The result of the conference was a general agreement upon the grades which had been established by the Reclassification Commission, with the understanding that certain modifications and amendments would be presented for consideration. A committee of five members, of which Mr. Merrill is chairman, was selected to revise and pass upon the suggested modifications and amendments from the different bureaus, the understanding being that another meeting will be held on Saturday afternoon at which final action will be taken regarding all suggested changes. The committee of which Mr. Merrill is chairman will also have charge of arrangements for presentation of the claims of the 20 different classes of engineers before the Reclassification Commission at its hearing, which will be held during the first week in December.

The grades agreed upon are based upon the qualifications of Civil Engineers and are as follows:

1. Chief Engineer.
2. Engineer
3. Associate Engineer
4. Assistant Engineer
5. Junior Engineer
6. Aid
7. Junior Aid

The two last grades are nonprofessional.

On Wednesday evening a meeting of the classification committee of the Engineering Council, of which Mr. Merrill is a member, was held in the Auditorium of the National Museum, at which the tentative established grades were discussed in open meeting and the entire plan of the committee presented. This also included a public announcement of the salaries which will be recommended as the standard compensation for engineers employed in the Government service. This schedule is as follows:

Professional Grades

1. Chief Engineer, $8100 and up
2. Engineer, $5940 to $7860
3. Associate Engineer, $4320 to $5760
4. Assistant Engineer, $2700 to $4140
5. Junior Engineer, $1620 to $2580

Nonprofessional Grades

6. Aid, $1680 to $2400
7. Junior Aid, $1080 to $1560

Nonprofessional Grades (Cont.)

It will be recommended that promotions be made automatically within the different grades, and advancement from one grade to another be made when the employee can qualify through training and experience for the next higher grade and a vacancy is available.

In the classification of foresters as miscellaneous engineers, the same general division into classes has been followed, viz:

1. Senior Forester
2. Forester
3. Associate Forester
4. Assistant Forester
5. Junior Forester
6. Forest Aid
7. Junior Forest Aid

The same schedule of salaries will be recommended for the foresters as for the other classes of engineers.

In general, it is expected that the Chief Forester will be classified as Senior Forester; the District Foresters as Foresters; the Forest Supervisors as Associate Foresters; the Deputy Forest Supervisors as Assistant Foresters; the Forest Assistants and Forest Rangers either as Junior Foresters or Forest Aids; and the Forest Guards as Junior Forest Aids; the other positions in the Forest Service comparable with those mentioned to be classified in like grades.

The present reclassification applies only to employees with headquarters in the District of Columbia and therefore affects only the Washington office and District 7; but it is expected, of course, that the reclassification will be extended to the field organizations immediately after it has been adopted for employees in the District of Columbia. From this it will be seen that the whole matter of reclassification so far as the Forest Service is concerned is in excellent shape and the outlook very bright.

A. F. POTTER.

Pulp Association Gets Report on a National Forest Policy

The American Paper and Pulp Association has to its credit the record of being the first of the wood-using associations to formulate a program of private forestry. At its meeting on November 14, 1919, held in New York City, a report on this subject, with special reference to the Pulp and Paper Industry, was submitted by the Committee on Forest Conservation.

Some extracts of the report follow:

"Wood is a basic material in our industries. It is an essential component of a multitude of articles of daily necessity. Merely enumerated without explanation, the names of the articles of which wood is the sole or an important constituent would require many pages of paper, made chiefly of wood itself. We can no more conceive of a state of society in this country with wood totally eliminated than we can of one in which iron has no part.

Forests supply raw material for industry, protect watersheds, furnish recreation grounds for the people and a refuge for wild life of every kind.

Unlike the mineral resources, however, the forest resources are reproducible. An exhausted mine is exhausted forever. Cut-over forest land can be made to produce another forest as good or better than the original. Hence the use and reproduction of timber can go hand in hand if we know enough and are able to take advantage of nature's laws.

The forest problem is essentially a land problem. National economy requires the best and fullest utilization of all our land and water surfaces. No forester or private land owner advocates the permanent growing of timber upon land which will yield higher returns and more essential products when put to other uses. Every forester and every thoughtful citizen agrees that land which is suited to the growing of timber and which does not have a more essential use for other purposes should be kept permanently producing timber."

The report gives a brief statement of the forest area and possible exhaustion of timber and lists those who are concerned under the following heads:

(a) The public or the users of the forests
(b) The manufacturers or converters of timber
(c) The timberland owners or the producers of timber

What Should be done. Under this heading the committee has the following to say:

"We believe that there is urgent need for the speedy adoption and execution of a forest policy by the National and State Governments in cooperation to accomplish these things:

FIRST: A forest survey and land classification to determine what we have in the way of present supplies and the areas which may properly be designated as necessary for watershed protection and as affording opportunity for future timber supply.

SECOND: A great enlargement and extension to all appropriate parts of the country of the public purchase of cut-over lands for which ample precedent has been established in the East, by both the Federal Government and by some of the States. National Forests in the West created by the setting aside of land from the public domain now contain some 135,000,000 acres. Much of this land, however, is but poorly forested and even under a much more extensive planting policy than has yet been proposed will not be a source of any considerable timber supply for a long time to come. The best interests of the country would seem ultimately to require at least twice the present area of public forests.

THIRD: A much more vigorous and general extension of Federal cooperation with the States in fire prevention along the line of the Weeks law coupled with such additional measures in the different States as will most reduce the fire hazard and afford opportunity for natural reproduction.

The States should do much more than they have yet done in the way of fire control. While the private owner may not be legally compelled to grow timber upon his land if he does not wish to do so he is under both moral and legal obligation to handle his property in such a way that it does not become a public menace and the state may require him to conduct his cutting operations in such fashion as to lessen the fire danger.

FOURTH: The States through the adoption of uniformly fair forest taxation laws, the establishment of forest nurseries and the preparation of forest working plans should offer every possible encouragement to the owner who wishes to grow timber on his land. If the owner of land, which after competent examination is classified as valuable only for timber growing, still refuses to take advantage of the opportunities provided for such undertakings, the land should then be acquired by the public at a fair valuation and made a part of the system of public forests.

FIFTH: With a few notable exceptions forest planting has not yet been seriously undertaken in the United States. Very properly the most immediate concern is the protection of the timber we already have, but with this, because of the time element involved, there should be carried out, wherever sufficient fire protection can be secured, a very large program of forest planting upon the lands which have been so far denuded that there is no hope of securing another crop through natural reproduction.

FINALLY: While we regard all the foregoing as necessary steps in any adequate and well rounded out National Forest policy, we especially urge that every effort be made to unite the professional foresters of the country, the timberland owners, and the consumers of forest products upon an immediate program of greatly increased forest fire protection and much more general public acquisition of cut-over lands. The first essential is to protect what we already have; the second to provide for future supply. Upon these measures the National and State Governments can and should cooperate to the fullest extent."

Some Interesting Resolutions

At its annual meeting held this year at Portland, Oregon, on October 6 and 7, the Western Forestry and Conservation Association adopted the following resolutions:

Federal Assistance

The need for keeping a forest crop on lands best suited for such use, whether such lands are in public or private ownership, is a national economic question, each year receiving greater attention by the Federal Government. We believe the first step in this direction is better fire protection methods and that the Federal Government may well aid this movement through greater interest and added financial support.

The Weeks Law under whose provision funds are appropriated for protection of timber at headquarters of navigable streams could be made to serve a much wider field of usefulness if the appropriation were materially increased and the law so modified as to permit cooperation with States and private organizations in the discretion of local Government officials.

State Assistance

Northwestern States which contain the bulk of the Nation's standing timber, unquestionably take less interest in and give less financial support to forest protection than many Eastern States having very limited timber resources. It is urged upon the legislative assemblies of these states that they provide adequate organization and funds for forest protection with a view to preserving a resource vital to the industrial well-being of the Northwest.

Federal Weather Bureau

We commend the excellent work of the U. S. Weather Bureau which each year becomes of greater assistance in forest protection effort. In order to perfect its work of forecasting dangerous conditions further experimental work is required and it is urged upon Congress that adequate appropriation be provided for such work.

Law Enforcement

Forest laws in the Northwestern States generally are not properly enforced and each year a large number of offenders against these laws escape punishment. It is urged that State and County officials, as well as private protection agencies, give added attention to enforcement of the law and make every effort to see that offenders are punished.

Amplification of Work of Western Forestry and Conservation Association

In view of the need for greater publicity, more careful study of methods, closer cooperation between different agencies in the Northwest and throughout the United States in fire protection effort, extension of the field covered by the Western Forestry and Conservation Association is endorsed along lines already considered by the Trustees of the Association. It is felt that there is need for a central agency which can act for organizations in matters of national importance, disseminate information pertinent to the work, and maintain a corps of specialists for the purpose of working out improvements which will benefit all agencies.

Aeroplane Patrol

The past season, for the first time in the history of forest protection, aeroplane patrols have been instituted in California and Oregon. Experience so far would tend to show that aeroplanes can be used to great advantage in detecting and locating fires and that their use gives promise of a decided advance in protection methods. We commend the progressiveness of the

War Department in allowing the use of airplanes for this important work and urge that the War Department establish as a fixed policy the use of a liberal number of planes to patrol the forests of the Northwest in cooperation with protection agencies. We especially commend the work of the pilots who, this past season, operated over our timbered areas. Their keen interest and painstaking study of local needs did much to establish the aeroplane as a proven factor in protection effort.

Wireless Telephones

We commend the work being done by the Forest Service and other departments of the Government in perfecting the use of the wireless telephone with a view to its becoming a factor in forest protection effort. The development of such service to a point where it can be cheaply and efficiently used will mean the saving in the Northwest alone of thousands of dollars annually.

Care with Fire in Logging Operations

It is urged that greater effort be made to standardize equipment and methods of preventing fires in logging camps. To this end we endorse the work of the Committee appointed at the last session of the Pacific Logging Congress and urge upon loggers strict observance of the fire protection rules issued by that committee.

United States Forest Service

The Federal Forest Service is to be commended for the excellent spirit of cooperation which it has always shown towards matters affecting the lumber industry and forest protection in particular.

With its organization of trained men it has constantly been in the forefront in suggesting and putting into effect improvements which have been of inestimable value to the industry. We urge upon Congress the need for providing necessary funds for extension of the work of this Service which has a field of usefulness extending far beyond the boundaries of the National Forests.

Troops for Forest Protection

We again urge upon Congress and the War Department the need for establishment of summer field posts throughout the timbered portions of the Northwest, and the training of troops along fire protection lines in order that they may be used as an auxiliary fire fighting force. We further believe that such training would be of inestimable value to both officers and men as preparation for actual warfare.

Survey of Forest Resources

We urge and recommend to forest industry generally that it give similar endorsement to a provision by Congress for a survey or census of the forest resources of the country which will determine the quantities of timber available for industrial uses, the current consumption of forest products, the probable regional requirements, the production of forests by growth to meet these requirements, and such other matters the knowledge of which is necessary before a National Forest policy may be intelligently adopted.

Public Acquisition of Cut-over Lands

Recognizing the necessity of reforestation in a degree which can not be expected of private ownership, we recommend to the Federal and State Governments the purchase and proper permanent management of cut-over lands not suitable for agriculture and also urge upon both lumbermen and states the immediate protection of the second-growth on such lands which already affords the basis of a large future timber supply.

Some Interesting Resolutions (Cont.)

Endorsing Col. Graves' Outline for National Forest Policy

Referring specifically to the suggestions for a National Forest policy forwarded us for discussion by Chief Forester Graves, and concerning which we are also requested by the National Lumber Manufacturers' Association to report our conclusions, we endorse Colonel Graves' proposed program as the most constructive and statesmanlike treatment of the subject we have seen and urge lumbermen and foresters alike to accept it, in the same temperate spirit He has shown, as a basis for discussing future cooperation.

As an earnest of our own approval, we hereby request our chairman to appoint a permanent committee to cooperate with State and Federal forest authorities in working out the problems and legislation suggested.

Emphasizing the Fire Situation

It is our conclusion that no other single phase of the problem of protecting existing forests and assuring reforestation approaches in importance at this time the necessity of convincing the public that the fire menace must be more radically dealt with by public aid. Although so far private, State, and Federal protective agencies have been phenomenally successful when losses of life, property, and merchantable timber are compared with the whole that has been safeguarded, the constant increase of hazard is making their burden a crushing one. Their facilities may be overtaxed at any time by an unusually bad year. Proper protection can not possibly be given the young growth upon which any constructive forest policy depends. All responsible elements should unite in an educational campaign to advertise this sobering fact and obtain more liberal State and Federal appropriations for field forces, more vigorous enforcement of the fire laws, and more active public support generally.

Insect Control

We urge State and Federal appropriations to enable the State Experiment Stations of Washington, Oregon, California, Idaho, and Montana, to carry on investigations of methods of insect control, in order that heavy financial loss to the timber interests of these states through insect depredations may be avoided.

Exchange of Cut-over Land

We endorse legislation such as that now pending in Congress to provide for exchange of privately owned cut-over lands adjacent to National Forests for National Forest stumpage of equal value.

In this connection it is urged that legislation looking to such exchanges permit private owners in their discretion to accept timber on a specified area, or certificates of negotiable character which may be used to secure timber, pay for grazing rights, or for any transactions with the National Forests.

It is believed that such action would bring to the Government the largest possible amount of cut-over land best suited to growing of timber.

We further urge that any legislation looking to exchange of cut-over land for Forest Service products contain the following provisions:

1st. That the transaction be simplified in every way consistent with good business practice.

2nd. That certificates issued by the Government in payment for land be made as negotiable as a bank check or note.

3rd. That such certificates be issued in denominations as low as $250 on request.

4th. That certificates be received at par by the Forest Service in connection with any money transaction with said service.

Some Interesting Resolutions (Cont.)

5th. That the use of such certificates be limited to transactions within the same State as that in which the exchanged land is located.

6th. That provision be made whereby counties and states will not be penalized through such transactions but will receive their usual percentages of receipts from forest resources disposed of under this or any other plan.

New York State Forestry Conference

At the conference of the New York State Forestry Association held at Syracuse, November 11, resolutions were adopted in favor of a comprehensive timber survey and land classification, for extensive reforestation of State and private areas, adequate fire protection, and a better system of taxation for timber. Colonel Graves addressed the conference.

Receipts for Four-Month Period

Receipts from the National Forests for the four-month period July 1 to October 30 (inclusive) show an increase of $128,812.02 over the receipts for the same period last year. Some interesting comparisons are obtained from the statement of receipts just issued. For instance, four of the Districts show increases over the last-year period's receipts, while the other three register decreases, as follows:

	Receipts	Increases	Decreases
District 5	$192,033.73	$102,836.34	
District 6	159,793.34		$15,582.23
District 2	128,245.96	37,572.97	
District 1	107,782.90		5,905.25
District 3	99,900.52		21,426.52
District 7	53,289.00	23,064.44	
District 4	48,050.25	8,252.27	
	$789,095.70	$171,726.02	$42,914.00

A further comparison shows that the major activities all register increases:

	Receipts	Increases	Decreases
Timber Sale (including turpentine)	$690,446.13	$131,317.32	
Grazing	62,677.23	7,288.60	
Special Use	9,208.93	935.65	
Water Power	8,192.15	582.29	
Totals	$770,524.44	$140,125.86	

The total receipts also include the following items:

Timber Settlement	$937.17		$1,347.39
Trespass (Timber, Grazing, Occupancy, Fire & Property)	17,634.09		9,964.45
	$18,571.26		$11,311.84

Total Receipts $789,095.70

Forest Management for the Marine Corps

A request has been received by the Forest Service from the officers in charge of the U. S. Marine Corps Reservation at Quantico, Virginia, for assistance in the preparation of a plan for forest management.

Forest Management for the Marine Corps (Cont.)

The immediate purpose in view is to apply correct cutting methods to the forest in the vicinity of the new officers' quarters under construction, to obtain better exposure to sun and wind, and to enhance the landscape and develop attractive vistas on the Potomac River and adjacent wooded hills. In doing all this it is desired to preserve the natural forest beauty.

Forest Examiner Mattoon, who was detailed to take care of this request, has just submitted a report on the conditions he found.

The extension of the improvements brings many of the proposed new quarters for officers on the well-wooded sites, and the commanding officer in charge has exercised the utmost care in having the removal of trees limited to areas absolutely needed for the building space. Every effort has been made to instill in the workman the absolute necessity of not damaging any of the forest growth which is to remain.

The new quarters are located at varying intervals on either side of a new concrete road, which for the main part winds along the backbone of a ridge rising from the principal camp level to an altitude of about 200 feet above the Potomac River. The road runs through a second growth forest, young and of good density. The dominating species are chestnut oak, white oak, southern red or Spanish oak, black oak, and red gum, with shortleaf pine, scrub pine, red cedar, dogwood, red oak, and black jack oak in mixture. On the cooler slopes and more moist situations there is considerable yellow poplar and some red maple, beech, and black locust, and in some localities, chestnut, black cherry, holly, and ironwood.

On account of the location of this forest on high ground just back of the old riverport town of Quantico and the presence of excellent transportation facilities, promiscuous cutting has been going on for many years. As a result the larger trees average very limby, crooked, or are otherwise inferior and relatively more valuable for fuelwood than for timber. This promiscuous cutting has resulted in greatly reducing the number of the more valuable tree species. Practically everything that is merchantable except for firewood or fence posts has been taken. Growth is very satisfactory on account of protection from fire and from overgrazing and on account of the favorable conditions of soil and moisture. Reproduction is good, particularly of yellow poplar, red gum, and the pines, resulting in practically a complete forest stand. Abundant reproduction of the oaks and hickories has probably been interfered with by the loose running of hogs.

In his report, Mr. Mattoon sets forth a number of considerations that should be borne in mind in the proposed thinning of the trees. He suggests that the forest be thinned gradually and calls attention to the fact that the opening up of the forest cover to obtain better air circulation in summer obviously removes a natural protection against cold winds in winter. This same holds true in regard to exposure and protection from the sun. The forest cover should be left nearly complete in selected places for the purpose of affording a screen between adjacent quarters and also along the roads and at all bends in the roads at the end of straight portions in order to enhance the natural wood effects along the drive.

In carrying out the cutting, the least desirable trees and the inferior individuals should be selected first. It seems possible to carry on the thinning satisfactorily on account of the big demand for fireplace and stovewood. On account of this demand there is no problem as to how to get the complete utilization of the wood cut in the improvement operations. Tree planting on the reservation assumes a relatively unimportant place, and will need to be resorted to only where the natural forest growth is not available to serve as a hedge or screen between houses. Where planting of this kind is necessary it seems that the native red cedar would be the most desirable tree taking all local conditions into consideration.

The reservation contains approximately 5,000 acres and it is believed that if the suggestions in the plan as outlined are followed it will be possible for the camp to secure all of its fuel and satisfy much of its requirements for rough lumber from the forest. The forest has, of course, been badly misused in times past but it is without doubt capable under proper management of a very substantial increase in the quantity and value of its timber yield. The favorable factors of soil and climate and the wide varieties of native species from which to choose make this possible.

Cooperation with the Director of the Census

A plan of cooperation for the field officers on the National Forests with the Census Bureau to take the 1920 census has been perfected. The plan provides for the detail of rangers to this work within the immediate districts in which the rangers are located to the extent that the rangers' services can be spared from their Forest Service duties. In every instance the Forest Supervisor will determine whether Forest Service work will permit the particular Forest officer to take up the census work. All necessary field work will be done during the month of January, 1920. To carry out this scheme the local supervisor of the Census Bureau has been instructed to get in touch with the Forest Supervisor of the immediate region concerned. The Census Bureau is prepared to meet the expenses incurred by the Forest officer while away from his official headquarters. This provision will be met by the payment of a $4 per diem, and by the payment for any special transportation required where other equipment is needed than that required of the Forest officer in performance of his duties as a Forest officer.

A Visitor from India

Ralph Pearson, Forest Economist in the Indian Forest Service, was a recent visitor at the Washington office. Mr. Pearson's mission in this country is to become acquainted primarily with the Forest Service as exemplified at the Madison Laboratory. It appears that provision has been made for the installation of a laboratory at Dehra Dun, India, and Mr. Pearson is in this country to get ideas. From Washington he proceeded to the laboratory, where he will put in several weeks.

The various members of the Washington office who had the opportunity of a visit with Mr. Pearson picked up much interesting information on the work of the Indian Forest Service.

Lumber in Italy

Longleaf pine known to the Italians as pitch pine is quoted at $125.00 per thousand feet to the Italians. Although the yellow pine is highly esteemed and greatly desired, the Italians can not afford to buy it at the present rate according to reports received from the United States Commercial Attaché at Rome. Lumber at present represents the most important ready commercial resource of Jugoslavia and is passing through its old anti-war channels. One Jugoslav lumber concern has obtained permission to export into Italy 4,000 carloads of lumber. The Jugoslav Government has put itself on record as desiring an exchange of products with Italy. In selling the lumber to Italy the proceeds are to be lodged in Italian banks as a credit upon which the Jugoslavs may draw for goods imported from Italy. According to the report, Italy needs large quantities of lumber as its own forests have been greatly overcut to meet war demands. There has been little or no importation for private consumption during the past four years.

Forestry School on Wheels

A carload of information on forests and their products has been going the rounds in Canada. The exhibits in the car were brought together by the Canadian Forestry Association. The car is the property of the Canadian Government Railways and is moved from point to point over the lines of the several railway companies operating in the western provinces. The exhibits have been drawn from many different countries including Canada, the United States, Great Britain, Germany, France, Scandinavia, Egypt, and Japan. Lectures are given by the men in charge and every phase of the timber industry from the planting of seedlings to the manufacture of all wood products is explained and, as far as possible, demonstrated.

The car contains a miniature nursery of spruce and Scotch pine seedlings. Adjoining this is another model of a maple sugar bush in which both primitive and modern methods of sugar making are illustrated. Numerous sections of trees are provided and are used to indicate facts that have been learned with respect to tree growth. The exhibit of wood products is very comprehensive and ranges from indurated fiberware to excellent specimens of fiber silk. There are samples of underwear and other articles of clothing from the Scandinavian countries, Germany, and Japan, surgical dressings and bandages made from Canadian spruce, heavy grain sacks from Britain, and scores of other similar articles, each of which has been produced from wood pulp. Samples are shown of the products derived from the distillation of the half million cords of Canadian wood which are now used annually in the distilled industries. Specimens of wood injured by disease and insects are exhibited and show in a striking form lessons of the injury done by these enemies of the forest. A field telephone and wireless set and a model of the lookout tower used in locating forest fires forms the central part of the exhibit. Colored transparencies and an automatic projector, as well as graphs and charts, are used to illustrate salient features in the Canadian timber industries.

Forest Products Laboratory Notes

A series of experiments to determine the suitability of plywood signs for use on the National Forests has been undertaken by the laboratory in cooperation with Districts 3 and 4. Sample specimens have been made and sent to two districts where they will be placed in use on the Forests and accurate records kept of their serviceability.

Plywood signs appear to have some very decided advantages for National Forest use, among which are their light weight, compactness with which they can be packed, rigidity or flexibility, as desired, and the possibility of making the letters ineradicable. Several of the so-called ineradicable signs were included in the shipment to District 3, where they will be tested.

District 2 - Rocky Mountain District

Fire last night destroyed the upper floor of the building in which the Supervisor's office of the San Juan Forest was located, causing a total loss of equipment, according to a telegram received today. Temporary quarters have been secured.

District 3 - Southwestern District

The Tijeras Canyon road on the Manzano Forest has been completed. The final inspection was made by District Engineer Long of the Forest Service and Engineer Flint of the Bureau of Public Roads on November 8. This road is 4.6 miles in length and eliminates some of the worst places between Albuquerque and Moriarty in the Estancia Valley.

E. A. Goldman of the Biological Survey, accompanied by Paul H. Roberts of this office and Messrs. Hoyt and Rowley, recently made a preliminary investigation of the Sitgreaves elk herd to determine its size, distribution, and summer and winter range. The study will be resumed this winter after snow falls. At the request of the Biological Survey and the Forest Service, the State authorities recently called off the proposed elk hunt this autumn until more specific information is secured on the size of the herd and the number that can safely be killed.

The final agreement between the Secretary of Agriculture and the Saginaw & Manistee Lumber Company is now in force. This agreement runs until 1950, at which time all timber rights of this Company, including those which they formerly held in perpetuity, will terminate. The estimate on the lands in question approximates 187 million feet of western yellow pine, some of which is on rough and almost inaccessible country south of Bill Williams Mountain on the Tusayan. By the terms of the agreement, the Forest Service is to mark trees for reservation for the purpose of reseeding the area. The terms of this marking are strictly prescribed. No yellow pine may be marked which is over 20" in diameter or whose bole is free of branches living or dead for one-third of its total height. Blackjacks may be marked up to 20" in diameter and up to 28" they may be marked if they have living branches joining the stem below sixteen feet from the ground. A maximum of four trees per acre for each section may be marked and a total of not to exceed ten per cent of the estimate for the section. The Company is obliged to pile and burn the brush on the fire lines of not over two hundred feet in width and not to exceed two miles in length for any one section. The remaining brush must be pulled thirty feet from the nearest living tree.

Although the law under which this extension of timber rights was sanctioned was passed on April 1, 1918, the Company continued operations without restriction, cutting all seed trees until September 23, 1918, pending execution of the agreement. On that date the Company agreed to leave seed trees in advance of the execution of the agreement and the area cut over since then is provided with seed trees.

When it is realized that the Government owns the land on which this timber stands as part of the Tusayan National Forest, the great importance of this agreement in securing conditions favorable to the restocking of the area becomes evident. A further advantage gained is that the Company is now in position to purchase all Government timber on intervening sections, which will increase the value of the Government stumpage as well as of their own timber. Much timber near Williams and Flagstaff lying on alternate sections was logged without regard to the intervening government timber thereby greatly increasing the cost of the operation and leaving the remaining timber isolated. On more inaccessible areas, this method would in some instances prevent logging altogether, yet the date of expiration of these rights (1926) would not have permitted the Company to log any but their own timber had the date not been extended. Efforts to place this Saginaw & Manistee timber rights project upon a firm basis have extended over a period of twelve years. The entire undertaking is an illustration of the folly of the original plan of granting title to odd sections of land, and an illustration of prolonged efforts necessary on the part of both Government and private interests to restore a semblance of economic wisdom in the management of these vast areas for economic timber and grazing regulation.

District 6 - North Pacific District

As one means of increasing livestock production in the Northwest, plans looking toward the grazing of sheep on cut-over and burned over lands are being discussed cooperatively by stockmen and timber owners, under the leadership of the Western Forestry and Conservation Association. The principal objection heretofore offered to thus utilizing such lands has been the difficulty of herding the sheep. Experts of the Oregon Agricultural College believe it possible to show by experiments that sheep can be successfully grazed on a large portion of these cut-over and burned-over lands. Interested private owners of timberland probably will donate the use of some experimental areas. It is believed also that grazing of sheep on these areas will materially lessen the fire hazard. It is hoped that eventually several million acres may be thus utilized.

An exhibit of Forest Service activities will be given at the Pacific International Livestock Exposition, Portland, Oregon, November 17 to 22 by Districts 5 and 6. R. F. Hammatt and J. D. Maxfield of District 5 are in Portland cooperating with J. L. Peterson and A. G. Jackson in the work connected with this exhibit. The Deschutes Forest has sent a plentiful supply of pine needles, which are to make the floor of the booth resemble that of a pine grove.

Seattle will be lighted from the Skagit River power plant on the Washington Forest within three years, according to the recent estimate of the hydro-electric engineer employed by Seattle to have charge of the project, and who, since October 1, has been investigating the conditions upon which development of the project depends.

After ten years in Alaska, six of them as a ranger on the Chugach, W. J. MacDonald has been detailed for one month to the District office in Portland. He looks forward with eagerness to seeing Wind River Nursery, planting being somewhat of a mystery to him. Mr. McDonald's ranger district is in the Prince William Sound region, where he travels from island to island by boat.

District 6 - North Pacific District (Cont.)

On the main land a glacier separates his territory from moose herds ten miles away; moose will not cross glaciers, hence there are none in his district. The herring industry, the source of special uses designated salteries and pounds, has received an impetus through substitution of the Scotch method of curing, consisting of gathering the fish into nets and then impounding them in water for cleansing; by the pre-war method they went without cleansing into barrels. Mr. McDonald reports a demand for homesteads around Anchorage. He will visit southern California before going back to Alaska.

District 7 - Eastern District

The flume, which was being constructed by the Noyes Land & Lumber Company, operating the Union Tanning Company sale on the Mt. Mitchell Forest, has now been completed. The ten-hour day capacity of the flume will not be less than 50 cords of acidwood. One interesting feature is the conveyor which is run by a gasoline engine and brings the wood and lumber up into a loading shed. In order to get a grade for the flume the lower end had to be laid in a cut three or four feet deep. The conveyor brings the timber products up from the end of the flume direct to the loading shed, where they are easily handled.

The Carr Lumber Company, operating in the Pisgah Forest, will soon begin logging Avery Creek, the last large watershed left to them on Davidson River. It will require three years to complete the cutting of all products.

Signs of the Canada lynx have been observed in both the Mt. Mitchell and Pisgah Forests this fall. Heretofore this animal has been scarce in this region.

A new high mark was set for bids for turpentine timber on the Florida Forest on November 15. The highest bid received was $256 per M, which is more than $50 in advance of the previous high mark. The bid covered the timber on three sections.

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WEEKLY BULLETIN

Forest Service - Washington Office

(Not for publication)

December 1, 1919.

Jornada Range Reserve Work Impresses Visiting Stockmen

As late as two years ago there was strong opposition to the work being done by the Forest Service in connection with the Jornada Range Reserve in southern New Mexico. Many stockmen, especially those using the public domain in the vicinity of the Jornada Range Reserve, deemed our work of no great importance to their industry; and the charge was frequently made that it was merely giving one particular stockman an opportunity to use exclusively about 200,000 acres of public domain for which the Government received practically nothing in return. In the last two years, however, there has been a remarkable change in this attitude. The stockmen of the entire Southwest have awakened to the value of the range experiment work. This culminated recently in a visit to the Jornada Reserve by the executive board of the New Mexico Cattle and Horse Growers' Association, consisting of about fifteen of the prominent open range cattle raisers of the State of New Mexico, all of them men who have been in the range cattle business for many years, understand thoroughly the situation covering the raising of cattle on the public domain, and are therefore excellent gaugers of the importance of our investigations along these lines.

The stockmen came to the Reserve at the close of the annual meeting of the Association and spent an entire day in going over with Grazing Examiner Forsling every phase of the work. Each of these visitors expressed himself as being greatly impressed with the value and scope of the investigations and realized more fully than ever the important relation to the range cattle industry of New Mexico and the southwest generally of the information which we are securing year after year as to the losses, increase in calf crop, improvement in grade of stock, methods of supplementary feeding, carrying capacity of range, and all the various activities and experimental projects which the Service is now prosecuting on the 200,000 acre reserve. One thing which particularly impressed the gentlemen was the question of losses and calf crop. The following table shows the losses from all causes on the Reserve as well as on the adjoining public domain for the years given:

JORNADA			PUBLIC DOMAIN		
1916	1917	1918	Average for a period of years in New Mexico	1917	1918 (estimated)
Per cent			Per cent		
1.5	1.8	3.5	7	15	25

It should be understood that the season of 1917-18 was the most serious one that the stock interests of the southwest have known for thirty years, which accounts for the increased loss and lowered calf crop during those two years.

CALF CROP

JORNADA			PUBLIC DOMAIN		
1916	1917	1918	1916	1917	1918
Per cent			Per cent		
72	64	62	50	30	30
Average 66			Average 37		

Jornada Range Reserve Work Impresses Visiting Stockmen (Cont.)

Thus we have for the three years an average calf crop of 66 per cent on the Jornada Reserve as against an average for the public domain of approximately 37 per cent. The above figures impressed every member of the committee with the necessity for taking early steps to reduce such losses on their home ranges, for the system followed at the Jornada in preventing such losses can be carried out on the ranges to a very great extent.

The stockmen were tremendously interested in a new experiment which has recently been inaugurated at the Reserve with the idea of determining the proper age at which heifers should be bred on the range. As a general rule, many range stockmen believe that heifers should not be bred to calve before three years of age. In order to determine the importance of this question a bunch of yearling heifers, consisting of 100 head of selected animals, has been bred to calve at two years of age and placed in a separate pasture. A similar selected herd of 100 will be bred to calve at three years. It is the feeling of those in charge of this experiment that by the time the animals have reached seven years of age those bred at three years will have produced the best results considering the number and value of stock in each herd, the losses, and the cost of feed and care.

So enthusiastic were the members of this committee that some of them expressed the hope that the Forest Service would be able to undertake grazing reconnaissance work on their own stock ranges, one being especially anxious to have the work taken up as soon as possible on his own range adjoining the Gila National Forest.

Taking it all around, the meeting was well worth while and the visiting stockmen went back to their homes and stock interests with a fuller appreciation of the beneficial character of the work now being carried on at the Jornada Reserve and its value to the stock interests of the entire State as well as to the southwest generally.

Nursery Stock Shortage in England

No definite line of action with regard to tree planting was adopted by the English Government until some time after the outbreak of the war, and nurserymen were left entirely without guidance as to what should be done, according to the Transactions of the Royal Scottish Arboricultural Society.

In the autumn of 1914 most of the nurseries throughout the country were fully stocked, but the demand for their produce practically ceased to exist, and millions of plants had to be burned, thus entailing heavy losses to the owners. At the same time nurserymen had to decide what action was to be taken by them with regard to future sowings; and during the years 1915-18, where there were no signs of an early cessation of hostilities or of a large demand for plants in the near future, it was not an easy matter for them, in the absence of a guarantee from the Government that they would be recompensed for any sacrifices that might be entailed by their keeping up their stocks to a pre-war level, to come to a satisfactory decision as to what course they should adopt.

They were further faced with the difficulty of getting suitable labor for nurseries. With the signing of the armistice, it was speedily apparent that there was going to be an unprecedented demand for plants and that existing stocks would be inadequate for the purpose. Fortunately the situation as regards labor had been somewhat relieved by the prompt action of the Board of

Nursery Stock Shortage in England (Cont.)

Agriculture in initiating steps to secure the release of skilled nurserymen as quickly as possible, and this ensured that this year's sowings would be sufficiently large to affect the situation appreciably in time. The stock of two-year seedlings and older plants, however, fell far short of the needs of the forester.

The present shortage of plants is not wholly due to labor difficulties and to the nurseryman's unwillingness to run the risk of growing stock which he might not be able to dispose of. The weather and the seasons during the past few years have, from the nurseryman's point of view, been most unfortunate. In 1917 the crop of cones on the Scotch pine was not a large one, and in 1918 it was practically a failure.

Although nurserymen made every effort to secure whatever cones could be had, and although their efforts in this direction were seconded by the Board of Agriculture, who undertook the organizing of the collection on all the areas cut over by the Government, there has probably never been such a shortage of Scotch pine seed within the memory of living nurserymen. There has been a fairly large crop of larch cones, but the quality has proved very indifferent. The crop has, however, been of importance in helping to eke out the supplies obtainable from the Continent, which have been smaller than usual. Continental firms have also been unable to ship as early as usual, owing to labor troubles; and, owing to a dockers' strike in Denmark, large quantities which were being consigned from that country were held up at the last minute.

An abnormally wet collecting season in Japan hindered the shipment of Larix leptolepis, so that only part of the supplies arranged for arrived in time for this season's sowing. No difficulty was experienced in getting prompt shipment of Douglas fir and Sitka spruce from America, and it is believed that the sowings of these species are much larger than usual.

The weather conditions during last winter and spring were very trying to the nurseryman. In the middle of September an early frost of great severity was experienced, and in some centers the entire stock of larch, both seedlings and transplants, was more or less affected, and to a lesser extent Douglas fir and Sitka spruce, Norway spruce, and beech likewise suffered. In addition, there were serious losses owing to the dry frosts which were experienced from January onwards. Owing to the absence of snow, the action of the frost was very unfavorable to plants, and frost lifting was much more prevalent than usual. There was a decided improvement in the weather during the months of April and May, and more labor being available, arrears of work were rapidly overtaken, and on the whole transplanting and sowing of tree seeds were finished only a few days later than in normal years.

Although nurserymen have not been able to accomplish so much as they intended, still the area of seedbeds will be much larger this season than in any year since 1914. The only disturbing element in extending the area of seedbeds is the difficulty experienced in finding women or boys to undertake the work of weeding.

The Needs of the Pulp and Paper Industry

The American Paper and Pulp Association has the following to say on the needs of the industry:

"The pulpwood used by the pulp and paper industry in the United States totaled 1,986,000 cords in 1899, 4,000,000 cords in 1909, and for the past five years an average of 5,300,000 cords, but at none of these periods was the cut of domestic wood sufficient. During the past nine years our mills have used 9,264,000 cords of imported pulpwood, an average in excess of 1,000,000 cords per year. While the total quantity of pulpwood used increased 159 per cent from 1899 to 1918, the cost increased 653 per cent.

The question of adequate timber supply affects every pulp and paper manufacturer in the United States without regard to whether in his individual capacity he be an owner of timberland or use wood for his raw material. The man who purchases pulp is as much concerned as the one who makes it. It is a vital problem to the entire industry and of especial importance to the pulp and paper manufacturers of Ohio, Pennsylvania, New York, New England, and the Lake States. The solution of the problem will determine whether our industry is to continue as present constituted or whether it will be forced to use other materials and perhaps transfer its operations to other localities, where there is abundant water power and available wood supply.

In the Northeastern States only about 25 per cent of the total land area is improved and there will be no great increase in the area of improved land in the future. In other words, 75 per cent of this region is potential forest land and should be kept in condition to furnish a permanent supply of raw material and water power for our basic industries among which pulp and paper manufacturing takes first rank.

No other large scale method of wood utilization equals that of pulp and paper manufacture in the completeness with which the raw material is utilized, and no one can set a limit to the number of articles of daily utility that it is possible to manufacture from pulp and paper. These articles will be manufactured in greater quantity and variety as our knowledge increases and as higher values of forest products lead to more scientific use of the timber supply. Pulp and paper manufacturing is the one great industry using wood as a raw material in which there is much hope for the practice of forestry as a commercial undertaking upon privately owned land. The production of pulpwood of rapid growing species under good conditions is a matter of much shorter time than the growing of saw timber, and the amount of capital invested in a pulp and paper mill is so great as to require a long period of return. Hence it is to the pulp and paper industry that professional foresters turn most hopefully for the practical application of their principles, and it is gratifying to note that a number of pulp and paper manufacturers have excellently qualified foresters upon their staffs and that in addition to protecting their timberlands from fire these companies are engaging in timber-planting operations for the definite purpose of providing a future supply of wood for their mills.

We believe that in addition to the general program of a National Forest Policy, in which fire prevention and a larger public ownership of timberland are the cardinal features, that in the Northeastern States especially the following measures are also desirable:

FIRST: Means should be afforded whereby the owner can have his land examined and classified with reference to soil conditions, kinds of timber to which it is best adapted, and treatment necessary to put the land upon a producing basis.

SECOND: Provision should be made under carefully worked-out regulations whereby upon application of the owner the State will take charge of reforesting operations, the cost thereof to be a lien against the growing crop. Such conditions should include exemption of the growing crop from taxation and final cutting under State supervision with stumpage charges to the State discharged at the time of cutting. It should also be possible for the owner to discharge the lien at any time upon payment of the reforesting cost and carrying charges to date, with interest at a low rate.

THIRD: While forestry is more easily and economically carried out upon large tracts of land, the small private holdings in the aggregate yield large amounts of timber and are widely dispersed throughout the larger holdings. It is important, therefore, that every possible facility be granted the smaller land owners for the reforesting of their holdings and the protection of the growing crop.

FOURTH: A definite policy should be established for the management, operation, and reforestation of State-owned land that will permit the cutting of the matured crop under such regulations as will maintain the forest in a reproductive condition with proper regard for its value as the natural home of wild life and a place of recreation for the people.

The Needs of the Pulp and Paper Industry (Cont.)

IN CONCLUSION: We are not asking for any undue concessions to the timberland owner. We are asking simple justice in the treatment of a specialized form of property and facilities for the development of this property to the best advantage. The problem is beyond the power of the individual owner to solve. It can be solved only by full cooperation of the owner, the Government, and the public, and in the working out of the solution the timberland owner can be expected to bear his share of the burden."

Washington Notes

Colonel Graves has gone to Salt Lake City to attend the District Foresters' meeting. The Washington office will also be represented by D. D. Bronson and R. Headley.

C. H. Squire of the office of Lands recently spent four weeks in the Southern Appalachian Forests, gathering data on recreational policies.

C. A. Lindstrom and F. C. Crass have returned from the west after a long trip with one of the Departmental Circuit Exhibits. Mr. Lindstrom is mighty well pleased to be home again; for he has been on the go continuously since March, his itinerary during that time reaching from the Swiss border to the Pacific Coast.

Forest Products Laboratory Notes

A satisfactory glue is very difficult to obtain in the Philippines on account of climatic conditions. The natives use a glue made from the milk of the Carabao, which seems to be the only glue that will hold, but it is impossible to get any information from them regarding the formula for making it. A request for a casein glue formula has come to the laboratory from the director of the 9th Band, C. A., Fort Mills, P. I. The glue is desired for use in repairing the string instruments in the band.

District 1 - Northern District

An exodus of the elk from Yellowstone Park a full month earlier than usual has been caused by the very cold weather recently. Settlers in that vicinity are annoyed by the elk breaking down fences in search of forage. Hay has been provided for them near the park by the park authorities, but the lack of grass along the Yellowstone River, brought about by last summer's drouth has caused them to drift much farther from the park than usual. It is estimated that between starvation and slaughter by hunters, 10,000 of this herd of 24,000 may be wiped out during the coming winter. Steps are being taken by the Forest Service to cooperate with the park authorities in order to find some way of meeting this serious situation. It is possible that an embargo may be placed on hunting for the season.

District 2 - Rocky Mountain District

Commenting on the possibilities of exchange of lands with the State of Colorado, a member of the Office of Lands stated that one of the biggest obstacles in the way of securing a consolidation of State lands into a State Forest in exchange for scattered Sections 16 and 36, was the opposition of local residents to having the area on which they now range their stock in the White River Forest placed under State control. It is proposed to trade this area to the State and the residents fear that the State's handling of it may be inimical to their interests.

This statement brought those of us who have been in Colorado a long time back to the days when the atmosphere was surcharged with the doctrine of State ownership of Forest lands. In no place in the State was this doctrine stronger than on the Williams Fork of the White River, where some of the leading opponents of the Forest Service had hunted and fished and mingled with the local residents, and perhaps in no place in the State was the stockmen's opposition to the Forest Service slower in dying out. It may be embarrassing to us now if we have done the job so well that local people will put up strenuous opposition to consolidations of State lands in exchange for the scattered sections. But there are at least grounds for congratulation in this indisputable sign of approval of Forest Service methods.

A few days ago while at Halsey, I came across a report by Bates giving the results of some measurements made by him and Supervisor Higgins on some plantations in western Nebraska in the vicinity of the National Forest area. On one plantation, which had at the time of measurement been established 34 years, there were 84 trees with an average diameter of 10", an average maximum height of 45', and an annual increment per acre of 68.8 cubic feet. There were 42 trees, or an average of 113 per acre, averaging 11.6 diameter d. b. h. These were classified as capable of producing two railroad ties each, or 126 ties per acre, which at the present value of about 75¢ per tie would be worth $94.50, or a gross annual income per acre of $2.25, not counting byproducts in the way of posts or cordwood. I believe it is not generally known throughout the Service that timber grows with such rapidity in the sandhill areas comprising the Nebraska National Forest. There are approximately 6,000 acres of plantations on this Forest now, ranging in size from last spring's plant to trees approximately 30 feet in height. It is an intensely interesting place for those interested in forestry, and any Forest officer traveling across the continent who could conveniently arrange his trip so as to stop a day or two at Halsey ought not to miss the opportunity.

FRED MORRELL.

Recently something over a million feet of yellow pine saw timber in lower Dead Man's Gulch on the Harney Forest was advertised at $2.30 per thousand feet for green timber and $1 per thousand feet for dead timber. But one bid was received from a purchaser who apparently anticipated competition, having bid $5.10 per M. feet for green saw timber and $3.80 for dead saw timber. These rates are somewhat higher than prices on recent sales in the Black Hills region for timber similarly located.

The meetings of the District Committee, which were held at regular intervals several years ago but have been allowed to lapse within the past few years, have been resumed and will be held every two weeks.

Assistant District Forester J. H. Hatton attended a meeting of the Advisory Board of the Colorado Stockgrowers Association on November 21 at the Association's offices in Denver. Four of the five members of the Board were present. The following special subjects were taken up and discussed, and resolutions passed upon them:

1. Resolution asking that something be done to do away with hunting in the mountains with large packs of dogs. On the Routt Forest, especially, this has become a regular occurrence and is a rather serious menace to the livestock interests.
2. Resolution endorsing the increased appropriation for range improvement.
3. Resolution favoring fall and early winter action on the National Forest grazing applications.
4. Resolution endorsing standard salting plans but urging that they be modified to suit local conditions.

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WEEKLY BULLETIN

Forest Service - Washington Office

(Not for publication)

MAY

December 1, 1919.

Jornada Range Reserve Work Impresses Visiting Stockmen

As late as two years ago there was strong opposition to the work being done by the Forest Service in connection with the Jornada Range Reserve in southern New Mexico. Many stockmen, especially those using the public domain in the vicinity of the Jornada Range Reserve, deemed our work of no great importance to their industry; and the charge was frequently made that it was merely giving one particular stockman an opportunity to use exclusively about 200,000 acres of public domain for which the Government received practically nothing in return. In the last two years, however, there has been a remarkable change in this attitude. The stockmen of the entire Southwest have awakened to the value of the range experiment work. This culminated recently in a visit to the Jornada Reserve by the executive board of the New Mexico Cattle and Horse Growers' Association, consisting of about fifteen of the prominent open range cattle raisers of the State of New Mexico, all of them men who have been in the range cattle business for many years, understand thoroughly the situation covering the raising of cattle on the public domain, and are therefore excellent gaugers of the importance of our investigations along these lines.

The stockmen came to the Reserve at the close of the annual meeting of the Association and spent an entire day in going over with Grazing Examiner Forsling every phase of the work. Each of these visitors expressed himself as being greatly impressed with the value and scope of the investigations and realized more fully than ever the important relation to the range cattle industry of New Mexico and the southwest generally of the information which we are securing year after year as to the losses, increase in calf crop, improvement in grade of stock, methods of supplementary feeding, carrying capacity of range, and all the various activities and experimental projects which the Service is now prosecuting on the 200,000 acre reserve. One thing which particularly impressed the gentlemen was the question of losses and calf crop. The following table shows the losses from all causes on the Reserve as well as on the adjoining public domain for the years given:

JORNADA			PUBLIC DOMAIN		
1916	1917	1918	Average for a period of years in New Mexico	1917	1918 (estimated)
	Per cent			Per cent	
1.5	1.8	3.5	7	15	25

It should be understood that the season of 1917-18 was the most serious one that the stock interests of the southwest have known for thirty years, which accounts for the increased loss and lowered calf crop during those two years.

CALF CROP

JORNADA			PUBLIC DOMAIN		
1916	1917	1918	1916	1917	1918
	Per cent			Per cent	
72	64	62	50	30	30
	Average 66			Average 37	

Jornada Range Reserve Work Impresses Visiting Stockmen (Cont.)

Thus we have for the three years an average calf crop of 66 per cent on the Jornada Reserve as against an average for the public domain of approximately 37 per cent. The above figures impressed every member of the committee with the necessity for taking early steps to reduce such losses on their home ranges, for the system followed at the Jornada in preventing such losses can be carried out on the ranges to a very great extent.

The stockmen were tremendously interested in a new experiment which has recently been inaugurated at the Reserve with the idea of determining the proper age at which heifers should be bred on the range. As a general rule, many range stockmen believe that heifers should not be bred to calve before three years of age. In order to determine the importance of this question a bunch of yearling heifers, consisting of 100 head of selected animals, has been bred to calve at two years of age and placed in a separate pasture. A similar selected herd of 100 will be bred to calve at three years. It is the feeling of those in charge of this experiment that by the time the animals have reached seven years of age those bred at three years will have produced the best results considering the number and value of stock in each herd, the losses, and the cost of feed and care.

So enthusiastic were the members of this committee that some of them expressed the hope that the Forest Service would be able to undertake grazing reconnaissance work on their own stock ranges, one being especially anxious to have the work taken up as soon as possible on his own range adjoining the Gila National Forest.

Taking it all around, the meeting was well worth while and the visiting stockmen went back to their homes and stock interests with a fuller appreciation of the beneficial character of the work now being carried on at the Jornada Reserve and its value to the stock interests of the entire State as well as to the southwest generally.

Nursery Stock Shortage in England

No definite line of action with regard to tree planting was adopted by the English Government until some time after the outbreak of the war, and nurserymen were left entirely without guidance as to what should be done, according to the Transactions of the Royal Scottish Arboricultural Society.

In the autumn of 1914, most of the nurseries throughout the country were fully stocked, but the demand for their produce practically ceased to exist, and millions of plants had to be burned, thus entailing heavy losses to the owners. At the same time nurserymen had to decide what action was to be taken by them with regard to future sowings; and during the years 1915-18, where there were no signs of an early cessation of hostilities or of a large demand for plants in the near future, it was not an easy matter for them, in the absence of a guarantee from the Government that they would be recompensed for any sacrifices that might be entailed by their keeping up their stocks to a pre-war level, to come to a satisfactory decision as to what course they should adopt.

They were further faced with the difficulty of getting suitable labor for nurseries. With the signing of the armistice, it was speedily apparent that there was going to be an unprecedented demand for plants and that existing stocks would be inadequate for the purpose. Fortunately the situation as regards labor had been somewhat relieved by the prompt action of the Board of

Nursery Stock Shortage in England (Cont.)

Agriculture in initiating steps to secure the release of skilled nurserymen as quickly as possible, and this ensured that this year's sowings would be sufficiently large to affect the situation appreciably in time. The stock of two-year seedlings and older plants, however, fell far short of the needs of the forester.

The present shortage of plants is not wholly due to labor difficulties and to the nurseryman's unwillingness to run the risk of growing stock which he might not be able to dispose of. The weather and the seasons during the past few years have, from the nurseryman's point of view, been most unfortunate. In 1917 the crop of cones on the Scotch pine was not a large one, and in 1918 it was practically a failure.

Although nurserymen made every effort to secure whatever cones could be had, and although their efforts in this direction were seconded by the Board of Agriculture, who undertook the organizing of the collection on all the areas cut over by the Government, there has probably never been such a shortage of Scotch pine seed within the memory of living nurserymen. There has been a fairly large crop of larch cones, but the quality has proved very indifferent. The crop has, however, been of importance in helping to eke out the supplies obtainable from the Continent, which have been smaller than usual. Continental firms have also been unable to ship as early as usual, owing to labor troubles; and, owing to a dockers' strike in Denmark, large quantities which were being consigned from that country were held up at the last minute.

An abnormally wet collecting season in Japan hindered the shipment of Larix leptolepis, so that only part of the supplies arranged for arrived in time for this season's sowing. No difficulty was experienced in getting prompt shipment of Douglas fir and Sitka spruce from America, and it is believed that the sowings of these species are much larger than usual.

The weather conditions during last winter and spring were very trying to the nurseryman. In the middle of September an early frost of great severity was experienced, and in some centers the entire stock of larch, both seedlings and transplants, was more or less affected, and to a lesser extent Douglas fir and Sitka spruce, Norway spruce, and beech likewise suffered. In addition, there were serious losses owing to the dry frosts which were experienced from January onwards. Owing to the absence of snow, the action of the frost was very unfavorable to plants, and frost lifting was much more prevalent than usual. There was a decided improvement in the weather during the months of April and May, and more labor being available, arrears of work were rapidly overtaken, and on the whole transplanting and sowing of tree seeds were finished only a few days later than in normal years.

Although nurserymen have not been able to accomplish so much as they intended, still the area of seedbeds will be much larger this season than in any year since 1914. The only disturbing element in extending the area of seedbeds is the difficulty experienced in finding women or boys to undertake the work of weeding.

The Needs of the Pulp and Paper Industry

The American Paper and Pulp Association has the following to say on the needs of the industry:

"The pulpwood used by the pulp and paper industry in the United States totaled 1,986,000 cords in 1899, 4,000,000 cords in 1909, and for the past five years an average of 5,300,000 cords, but at none of these periods was the cut of domestic wood sufficient. During the past nine years our mills have used 9,264,000 cords of imported pulpwood, an average in excess of 1,000,000 cords per year. While the total quantity of pulpwood used increased 159 per cent from 1899 to 1918, the cost increased 653 per cent.

The question of adequate timber supply affects every pulp and paper manufacturer in the United States without regard to whether in his individual capacity he be an owner of timberland or use wood for his raw material. The man who purchases pulp is as much concerned as the one who makes it. It is a vital problem to the entire industry and of especial importance to the pulp and paper manufacturers of Ohio, Pennsylvania, New York, New England, and the Lake States. The solution of the problem will determine whether our industry is to continue as present constituted or whether it will be forced to use other materials and perhaps transfer its operations to other localities, where there is abundant water power and available wood supply.

In the Northeastern States only about 25 per cent of the total land area is improved and there will be no great increase in the area of improved land in the future. In other words, 75 per cent of this region is potential forest land and should be kept in condition to furnish a permanent supply of raw material and water power for our basic industries among which pulp and paper manufacturing takes first rank.

No other large scale method of wood utilization equals that of pulp and paper manufacture in the completeness with which the raw material is utilized, and no one can set a limit to the number of articles of daily utility that it is possible to manufacture from pulp and paper. These articles will be manufactured in greater quantity and variety as our knowledge increases and as higher values of forest products lead to more scientific use of the timber supply. Pulp and paper manufacturing is the one great industry using wood as a raw material in which there is much hope for the practice of forestry as a commercial undertaking upon privately owned land. The production of pulpwood of rapid growing species under good conditions is a matter of much shorter time than the growing of saw timber, and the amount of capital invested in a pulp and paper mill is so great as to require a long period of return. Hence it is to the pulp and paper industry that professional foresters turn most hopefully for the practical application of their principles, and it is gratifying to note that a number of pulp and paper manufacturers have excellently qualified foresters upon their staffs and that in addition to protecting their timberlands from fire these companies are engaging in timber-planting operations for the definite purpose of providing a future supply of wood for their mills.

We believe that in addition to the general program of a National Forest Policy, in which fire prevention and a larger public ownership of timberland are the cardinal features, that in the Northeastern States especially the following measures are also desirable:

FIRST: Means should be afforded whereby the owner can have his land examined and classified with reference to soil conditions, kinds of timber to which it is best adapted, and treatment necessary to put the land upon a producing basis.

SECOND: Provision should be made under carefully worked-out regulations whereby upon application of the owner the State will take charge of reforesting operations, the cost thereof to be a lien against the growing crop. Such conditions should include exemption of the growing crop from taxation and final cutting under State supervision with stumpage charges to the State discharged at the time of cutting. It should also be possible for the owner to discharge the lien at any time upon payment of the reforesting cost and carrying charges to date, with interest at a low rate.

THIRD: While forestry is more easily and economically carried out upon large tracts of land, the small private holdings in the aggregate yield large amounts of timber and are widely dispersed throughout the larger holdings. It is important, therefore, that every possible facility be granted the smaller land owners for the reforesting of their holdings and the protection of the growing crop.

FOURTH: A definite policy should be established for the management, operation, and reforestation of State-owned land that will permit the cutting of the matured crop under such regulations as will maintain the forest in a reproductive condition with proper regard for its value as the natural home of wild life and a place of recreation for the people.

The Needs of the Pulp and Paper Industry (Cont.)

IN CONCLUSION: We are not asking for any undue concessions to the timberland owner. We are asking simple justice in the treatment of a specialized form of property and facilities for the development of this property to the best advantage. The problem is beyond the power of the individual owner to solve. It can be solved only by full cooperation of the owner, the Government, and the public, and in the working out of the solution the timberland owner can be expected to bear his share of the burden."

Washington Notes

Colonel Graves has gone to Salt Lake City to attend the District Foresters' meeting. The Washington office will also be represented by D. D. Bronson and R. Headley.

C. H. Squire of the office of Lands recently spent four weeks in the Southern Appalachian Forests, gathering data on recreational policies.

C. A. Lindstrom and F. C. Crass have returned from the west after a long trip with one of the Departmental Circuit Exhibits. Mr. Lindstrom is mighty well pleased to be home again; for he has been on the go continuously since March, his itinerary during that time reaching from the Swiss border to the Pacific Coast.

Forest Products Laboratory Notes

A satisfactory glue is very difficult to obtain in the Philippines on account of climatic conditions. The natives use a glue made from the milk of the Carabao, which seems to be the only glue that will hold, but it is impossible to get any information from them regarding the formula for making it. A request for a casein glue formula has come to the laboratory from the director of the 9th Band, C. A., Fort Mills, P. I. The glue is desired for use in repairing the string instruments in the band.

District 1 - Northern District

An exodus of the elk from Yellowstone Park a full month earlier than usual has been caused by the very cold weather recently. Settlers in that vicinity are annoyed by the elk breaking down fences in search of forage. Hay has been provided for them near the park by the park authorities, but the lack of grass along the Yellowstone River, brought about by last summer's drouth has caused them to drift much farther from the park than usual. It is estimated that between starvation and slaughter by hunters, 10,000 of this herd of 24,000 may be wiped out during the coming winter. Steps are being taken by the Forest Service to cooperate with the park authorities in order to find some way of meeting this serious situation. It is possible that an embargo may be placed on hunting for the season.

District 2 - Rocky Mountain District

Commenting on the possibilities of exchange of lands with the State of Colorado, a member of the Office of Lands stated that one of the biggest obstacles in the way of securing a consolidation of State lands into a State Forest in exchange for scattered Sections 16 and 36, was the opposition of local residents to having the area on which they now range their stock in the White River Forest placed under State control. It is proposed to trade this area to the State and the residents fear that the State's handling of it may be inimical to their interests.

This statement brought those of us who have been in Colorado a long time back to the days when the atmosphere was surcharged with the doctrine of State ownership of Forest lands. In no place in the State was this doctrine stronger than on the Williams Fork of the White River, where some of the leading opponents of the Forest Service had hunted and fished and mingled with the local residents, and perhaps in no place in the State was the stockmen's opposition to the Forest Service slower in dying out. It may be embarrassing to us now if we have done the job so well that local people will put up strenuous opposition to consolidations of State lands in exchange for the scattered sections. But there are at least grounds for congratulation in this indisputable sign of approval of Forest Service methods.

A few days ago while at Halsey, I came across a report by Bates giving the results of some measurements made by him and Supervisor Higgins on some plantations in western Nebraska in the vicinity of the National Forest area. On one plantation, which had at the time of measurement been established 34 years, there were 84 trees with an average diameter of 10", an average maximum height of 45', and an annual increment per acre of 68.8 cubic feet. There were 42 trees, or an average of 113 per acre, averaging 11.6 diameter d. b. h. These were classified as capable of producing two railroad ties each, or 126 ties per acre, which at the present value of about 75¢ per tie would be worth $94.50, or a gross annual income per acre of $2.25, not counting by-products in the way of posts or cordwood. I believe it is not generally known throughout the Service that timber grows with such rapidity in the sandhill areas comprising the Nebraska National Forest. There are approximately 6,000 acres of plantations on this Forest now, ranging in size from last spring's plant to trees approximately 30 feet in height. It is an intensely interesting place for those interested in forestry, and any Forest officer traveling across the continent who could conveniently arrange his trip so as to stop a day or two at Halsey ought not to miss the opportunity.

FRED MORRELL.

Recently something over a million feet of yellow pine saw timber in lower Dead Man's Gulch on the Harney Forest was advertised at $2.30 per thousand feet for green timber and $1 per thousand feet for dead timber. But one bid was received from a purchaser who apparently anticipated competition, having bid $5.10 per M. feet for green saw timber and $3.80 for dead saw timber. These rates are somewhat higher than prices on recent sales in the Black Hills region for timber similarly located.

The meetings of the District Committee, which were held at regular intervals several years ago but have been allowed to lapse within the past few years, have been resumed and will be held every two weeks.

Assistant District Forester J. H. Hatton attended a meeting of the Advisory Board of the Colorado Stockgrowers Association on November 21 at the Association's offices in Denver. Four of the five members of the Board were present. The following special subjects were taken up and discussed, and resolutions passed upon them:

1. Resolution asking that something be done to do away with hunting in the mountains with large packs of dogs. On the Routt Forest, especially, this has become a regular occurrence and is a rather serious menace to the livestock interests.
2. Resolution endorsing the increased appropriation for range improvement.
3. Resolution favoring fall and early winter action on the National Forest grazing applications.
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WEEKLY BULLETIN

Forest Service - Washington Office

(Not for publication)

December 8, 1919.

Meeting the Fuel Crisis

To relieve as far as possible the serious fuel crisis the Forester, with the approval of the Secretary of Agriculture, has authorized the District Foresters to cooperate fully with all local and State fuel administrators by making available at once all wood fuel material. Waiver of all restrictive regulations has been authorized. This means, for instance, that on Forests where no green material has been granted under free use such material should be made available in order to prevent suffering or hardship; also that free use material may be made generally available and that the question of residence of the permittee or his qualifications is not to be the governing factor in issuing a permit.

By this action the Forest Service has taken a decided and effective step toward relieving the serious conditions existing in regions deprived of bituminous coal.

Grazing Assistant Examination

The Civil Service Commission has announced an examination for Grazing Assistant to be held sometime during the spring of 1920. The Branch of Grazing is anxious to secure an additional number of Grazing Assistants and it is hoped that many of the field men whose work has been along these lines will get busy and prepare themselves for the examination.

The Elk Horn Hot Springs

Developments at the Elk Horn Hot Springs on the Beaverhead Forest, 40 miles from the city of Dillon, Montana, afford a good illustration of the benefits of cooperation. About three years ago, at a public meeting in Dillon, the citizens of that city and farmers from the vicinity discussed with Forest officers the desirability of making Elk Horn Hot Springs a pleasure resort whose attractions and advantages might be made available to the public without commercializing the beneficial, health-restoring properties of the waters of the springs, or restricting the utilization of the area surrounding the springs for recreational purposes. As a result of that meeting, public spirited citizens subscribed several thousand dollars to defray the cost of providing an adequate bath house equipped with dressing rooms, shower baths, private baths, and a large public "plunge," all for the free use of the public. The money so subscribed was to be spent under the supervision, and with the approval of the Forest Supervisor.

The Service surveyed the entire area and subdivided it into camp grounds for the public and cottage sites for those who might wish to maintain summer homes near the springs. The survey also provided a site for the free public bath house and plunge, a location for a hotel, a public camping ground, and a first class road from the Forest boundary to the springs, a distance of about 2½ miles.

What has been accomplished to date? Many applications for cottage sites have been received. Four cottages of elegant design and finish are already built. Eight foundations are laid and the permittees are pushing construction as fast as men and material can be assembled. The foundation for the public bath rooms, dressing rooms, and the public plunge are finished. Material for the buildings has been contracted for and it is expected that the work will be finished next spring. The plunge was finished last spring and was enjoyed by hundreds of people during the year. A first class highway has been built by the Service from the Forest boundary to the springs at a cost of about $10,000, and Beaverhead county is improving the public roads connecting with this highway at a very considerably greater cost. The regular permittees on the area have formed an association, of which the Forest Supervisor is, ex-officio, a member, for the purpose of providing and enforcing suitable sanitary and hygienic regulations on the entire area.

The Elk Horn Hot Springs (Cont.)

Arrangements are now under way to provide suitable piping for water mains whereby cottages may be furnished both hot and cold water, and the public camp ground equipped with a large fountain from which campers can secure water for their purposes.

Hiring Automobiles Owned by Forest Officers

Automobiles owned by Forest rangers or other Forest officers may be hired by members of the Washington office and district offices for special trips at local commercial rates when no other machines are available and the emergency is such that Government interests would otherwise suffer.

The Secretary has approved such hiring on special authorization by the Forester or District Forester. The automobiles must be offered voluntarily and no Forest officer has the authority to demand the use of the private machine. Authority will not be granted to Forest officers to hire machines from men directly under them.

Forest officers hiring automobiles under such special authority must submit monthly reports showing for each trip made the length of trip, time consumed, amount paid, and the name and official title of the owner. Each report must be accompanied by a brief report indicating the conditions making such hiring necessary.

The Realizable Resources of the German Forests

"French forests will not be re-established at their past degree of high value within a century," says M. Huffel in the Revue des Eaux et Forets.

In taking stock of the forest conditions in France at the close of the war, Mr. Huffel gives thorough consideration to German forests because he holds it absolutely necessary to take from the forests of the enemy what the French need and to replace the losses incurred through the war.

The following are some excerpts from the article referred to:

"The damage done to our forests cannot immediately be restored by spending money. A house may be rebuilt, a factory can be provided again with the essentials in a few years. To reconstitute a forest there is required, not only money, but time.

This situation is the more disquieting because it is precisely at this moment, when the sources of wood production are so much reduced, that our needs have enormously increased. We have to rebuild our houses and to replace our furniture and appliances.

From official statistics of 1900 the total wooded surface of the German Empire (omitting Alsace-Lorraine) is 13,556,037 hectares (1 hectare equals 2.47 acres). Broadleaved species cover 26.7 per cent of the area, (oak high-forest occupies 5.2 per cent of the total wooded area) and conifers occupy 73.7 per cent of the area, distributed as follows: Scots pine 46.6 per cent, spruce 24.6 per cent, and silver fir 2 per cent."

The author estimates that there are in the German forests approximately 3,568,000 hectares of woodland over 60 years, of which about half is Scots pine, over a quarter beech, and a fifth spruce.

It is estimated that there is immediately available a total of 652 million cubic meters (23,028,640,000 cubic feet - 1 cubic meter equals 35.32 cubic feet) of which a little more than one-third is Scots pine, a little less than one-third spruce and silver fir, and a little less than a quarter beech. The Scots pine will furnish excellent timber for rebuilding the houses and the beech will give good carpentry material. The spruce and silver fir will yield good planks, the oak will help the cabinet makers.

"The ruin of houses, the destruction of furniture and implements can be compensated in money; forest produce can only be replaced in kind. We shall not find in the open world-market the wherewithal to replace what we have lost. Our forests will not recover their old capacity of production within a century. We must, therefore, make the enemy pay us in kind, that we may be enabled to properly manage our impoverished forests on the one hand, and on the other that we may reconstruct our appliances and rebuild our houses.

The Realizable Resources of the German Forests (Cont.)

The exploitation of the wooded capital of the public German forests will not be an act of vengeance, but of restitution and reparation. It will be still less an act of spiteful hate. We may in all conscience accomplish an act of restitution, of reparation, and of justice in exploiting the public German forests.

Can it be done materially? How many days' work will be required; over how many years must the work be spread; is the world's market capable of absorbing the 338 million cubic meters which will be thrown upon it?

The actual total production in timber of the German forests is 20 million cubic meters a year. The additional labor, then, required for the exploitation of the whole material of the State forests in one year would correspond to 320 million cubic meters.

A pair of experienced woodmen can fell and fashion about 5½ to 6 cubic meters a day in ordinary conditions. If it was clear-felling in old woods, and at all seasons, we may allow an extra 3 cubic meters of outturn a man a day. It results from this that 100 million days' labor would be required to effect the purpose in a year--that is to say, it would be necessary to employ, in addition to the native labor of peace time, a regular army of 330,000 workmen. That seems to me impossible. If we confined ourselves to removing in a year the timber of over 80 years old about 200,000 men would be needed, while for the timber of over 100 years only there would be required 180,000 workmen.

It would be suitable, then, to spread the work over a longer period--say five years. During these five years the native labor would suffice for about 100 million cubic meters. There would remain to be cut by imported workmen about 230 million cubic meters in five years, taking account of the growth of the woods during the period of realization, or 46 million cubic meters a year. Fifty thousand men would suffice for this task, and that seems to me quite feasible. The labor would be furnished by Bulgarian and Turkish prisoners, who appear thoroughly suited to accomplish this work of reparation and justice in the country of their friends, the boches. The Bulgarians especially are very good manual laborers, and would certainly give full satisfaction.

The supervision of this extraordinary felling should be confided to the officers of the army which will occupy this enemy's country till reparation is complete. It would be a pity to turn aside for this work our forest officers, whose numbers, alas, are now so terribly reduced. They have to carry out in France a heavy and difficult task, which will only too fully employ all their strength, competence, and devotion.

France consumed annually before the war 11 million cubic meters of timber, of which nearly 5 million came from abroad. Our demands are going to be greatly increased, and our native supplies enormously reduced. I think our country ought to set aside at least 160 million cubic meters for her own use, during the next five years, from the amount of material cut in Germany.

Our British friends used to import annually nearly 15 million cubic meters, which they bought in Russia, Sweden, Norway, Austria, etc., and in their colonies. Their needs are going to be greatly increased by reason of the exhaustion of all supplies. The United Kingdom will certainly be able to absorb about 100 million cubic meters of wood during the five years following the war.

Italy, Belgium, and Serbia would together take about 100 million.

Finally, the Germans themselves--whom we shall be careful to forbid felling timber in competition with us--would absorb a good part of what was not required by our friends and ourselves. We should not, doubtless, refuse to sell to them at a reasonable rate. Germany used annually to buy from abroad 12 to 13 million cubic meters and produced about 20 million.

There is thus no reason to anticipate any difficulty in the utilization of all this material, provided we take five years at least over it."

Cypress Becomes a Precious Wood

No longer will southern cypress be mere commonplace lumber. In the future it will take its place as a precious wood. At any rate an effort will be made by the Southern Cypress Manufacturers' Association to raise the position of cypress wood and for this purpose has fixed the annual dues of the

Cypress Becomes a Precious Wood (Cont.)

members of its association at $1.00 per thousand feet of production for the year 1920. The bulk of the money is to be used in an advertising campaign. No other association of lumber manufacturers in the world has such high dues per thousand feet of production as the Southern Cypress Manufacturers' Association. This association has for years enjoyed the reputation of having higher dues than any other lumber organization, and as a result of the available funds has been able to carry on a very effective advertising campaign, which has shown itself in the increased call for cypress material.

Washington Notes

Active participation of Government employees residing in Washington in municipal affairs of the city is receiving encouragement. At the present time a campaign for membership in the various citizens' associations is underway, and the various Government employees are given every encouragement to join the association representing the neighborhood in which they reside.

Roy Headley has been appointed Assistant Forester and Chief of the Branch of Operation in the Washington office, and assumed his new duties on December 1. For some time past Mr. Headley has been on detail to the Reclassification Commission and has done some effective work there which it is expected will be of great value to the Forest Service in the near future. Mr. Headley attended the District Foresters' meeting at Salt Lake City, and upon his return to Washington will devote his entire time to the new job.

District 2 - Rocky Mountain District

A meeting of the secretaries of commercial bodies of the principal cities of the northwest was recently held at St. Paul. At the same time a meeting of representatives of the non-commercial tourist agencies throughout the northwest was held to organize the northwest territory tourist associations. The object of these associations is the advertisement of the chief recreation attractions of the country tributary to the region. This meeting was attended by a member of the District Office.

The value of the National Forests was recognized and received constant mention in all of the discussions. A resolution was passed petitioning the Secretary of Agriculture to allot money as liberally as possible for the development of the recreation facilities of the National Forests. A temporary organization was effected, a constitution and by-laws to be drawn, after which a meeting will be held, probably in Denver about February 1, when a permanent organization will be made.

The Ten Thousand Lakes of Minnesota Association was instrumental in calling this conference and is playing the greater part in the direction of the affairs of the new organization. This Association is conducted without profit and is entirely a public service organization, advertising Minnesota's outdoor attractions. It is much interested in the development of the Minnesota National Forest and contributed liberally toward the exhibit of the Forest Service at the Minnesota State Fair the past season.

Review of the Annual Grazing Reports indicates that the allowances for 1920 will be about equal to those for 1919. One rather striking feature brought out in the Wyoming reports is that in spite of the most severe drouth recorded for 25 or 30 years, the supervisors feel that the Forests have not been overestimated.

J. I. Buckner is back in the District Office after a seven weeks' inspection trip on the San Juan, Durango, Montezuma, and Holy Cross-Sopris Forests. He assisted in the consolidation of the property records and files of the Holy Cross-Sopris Forests.

A timber sale report covering the Homestake Unit on the Holy Cross was sent the Forester for approval during the past week. It is estimated that there are 38 million feet of timber to be cut from this area, the recommended prices being $1.65 per M for green Engelmann spruce and lodgepole pine saw timber, $1.00 per M for green alpine fir and merchantable saw timber of all species, and 16¢ per hundred linear feet for mine props. This area is located near Gold Park and the appraisal is based on the construction of 8¼ miles of flume and several chutes which will be necessary in order to log the timber from the greater part of the area, since most of the timber is located above a rather steep rocky ridge to the southeast of Homestake Creek.

District 3 - Southwestern District

The Archaeological Institute of America and the Forest Service will co-operate in making the ruins of the Bandelier National Monument on the Rito de Los Frijoles more accessible and in preserving them against injury. The Forest Service has allotted $5,000 and Sandoval $500 to improve the road from the monument to Buckman. The necessary survey will be made this winter so that construction work can be begun in the spring. The Archaeological Institute is planning further excavation of the ruins and the Forest Service is arranging to furnish funds for preserving and restoring some of the ruins under the supervision of the Institute.

A caretaker's house is now under construction by the Forest Service at the Bandelier Monument. Designs for this structure were prepared by Carlos Vierra, the well-known authority on New Mexico architecture.

The Coronado Ranger meeting was fortunate in having present the last day it was in session George B. Sudworth, the dendrologist of the Service. He needed no introduction to the old timers, since his contact with forest work in this country antedates that of practically any other individual in the service and stretches over all the years since 1887. Mr. Sudworth was also well-known to the newer men through his numerous publications on trees, especially those of this region. On this trip to the Southwest he expects to look into several disputed species on the Coronado, particularly in the Huachuacas.

The issuance of the necessary special use permits for pipe lines to the Arizona Cattle and Sheep Company has been authorized by the District Office. These permits will carry out the distribution of stockwater for several thousand acres of unutilized range northeast of San Francisco Mountain on the Coconino. This is the culmination of several years effort on the part of the Company and its predecessors to prove the existence of a hidden water source in the mountains through open cuts and tunnels upon which the issuance of the Forest Service special use and grazing permits have been conditioned. It has been demonstrated to the satisfaction of Supervisor Miller and the Company's financial supporters that the water is available and it now appears that unused range capable of supporting about 3,000 head of cattle yearlong will be open for use by next fall.

The range reconnaissance party, working on the Carson Forest, recently found a very small lake largely covered by a substance closely resembling paper. Samples were sent to the Madison Laboratory and from a letter received, it seems to be a rather unusual find. The Pulp and Paper Section of the Laboratory states that while the fiber under the microscope is not similar to either cotton or linen paper, they are very much surprised to note that this "natural paper" reacts chemically in a manner similar to rag paper. Additional information has been requested by the Laboratory.

District 5 - California District

A new Forest Service film, entitled "The Cost of Carelessness" by the World Film Company, is to be released in about thirty days. This is the first film of importance to be produced in "nature's colors," a new process in which the colors are secured at the time the film is taken instead of being reproduced as hand work superimposed in accordance with some artist's ideas.

Much of this film was taken on the Shasta Forest in 1917, in fact, the camera man and his machine were both impressed for the fire fighting job.

District 5 - California District (Cont.)

J. D. Maxfield, in charge of exhibit work in District 5, has drawn down this year two first and one special prize for the Forest Service display, not including a first prize at the Portland Livestock Show. In addition, Miss Stevens of the Eldorado was awarded a second prize for the local Forest Service exhibit.

On top of this comes a request from the Director of Publicity of the Sixth District Agricultural Association, offering a space approximately 45 x 50 feet in one of the permanent Exposition Park buildings, Los Angeles, provided the Forest Service will install a permanent exhibit.

To W. I. Hutchinson of District 2 the credit should be given of adapting the window display idea to Forest Service educational material. District 5 has its first opportunity to adopt this plan in a letter from the Guarantee Trust & Savings Bank of Los Angeles, asking if we cannot loan Forest Service material for an educational window display.

Is the creation of National Forests a hardship on states and counties from the tax viewpoint? Plumas County, California, thinks not. As a result of one sale just made on the Plumas Forest, this county will receive $12,000 a year for the next twelve years for roads and schools. Not so bad for a remote, mountainous region, especially considering that Plumas County will eat her cake and still have it. Consider the result if the average commercial logger cleaned up this region and consider, too, the tax value of the slashed-over acreage after the clean-up.

District 6 - North Pacific District

Christmas tree sales are a rarity on the Forests of this District. Almost anyone who cares to do so can go into nearby woods, find a suitable young fir, and get permission to cut it. Owners of cut-over lands more accessible to the cities and towns than are the National Forests provide the supply for the local markets. A demand for our Christmas trees in eastern states was not thought to exist. However, a merchant of Tacoma, after four years of effort, has developed a market that is said to reach the middle west, Philadelphia, and even some parts of the south, and to average twenty-five carloads annually. Logging Engineer E. C. Erickson, while on his way to Portland from the Tongass Forest, passed an eastward bound shipment of this merchant's young firs, carefully selected with a view to suitability for Christmas trees, most of them from privately owned cut-over lands accessible to the railroad and adjacent to the towns of Vader and Eveline, near Tacoma.

A beaver-gnawed hemlock stump, 25 inches in diameter above the incision, 25 inches below it, and 4 inches at the gnawed point, is on exhibition in the office of the Oregon Forest. It was found by Deputy Forest Supervisor Carl B. Neal on the Still Creek planting area, near Government Camp. Beavers are plentiful along Still Creek where they occasionally cause a tree to fall. However, they are not usually so strong or persistent as the one that gnawed through this hemlock, and they are not looked upon as a serious menace.

That cut-over lands may be made profitable by planting them with walnuts was stated by Knight Pearcy at the meeting of the Western Walnut Association on November 13, at McMinnville, Oregon. He said also that such lands need not be cleared of stumps before planting the walnuts. It can be added, from first-hand knowledge, that perfect walnuts do grow on cut-over land in Oregon.

Preservation for the benefit of the public of a particularly fine timbered strip along the Dalles-California highway, between Bend, Oregon, and the Deschutes Forest, has been arranged for by the Shevlin-Hixon Company, in memory of Thomas L. Shevlin, Yale athlete, Oregon timberman, and first president of the Shevlin-Hixon Company. To include certain particularly beautiful spots, the company is about to buy timber not in its present holdings. The memorial gives also a park to the city of Bend.

A payment of $850.72, without court action, in settlement for the unauthorized cutting on the Wenatchee Forest of pine valued at $3.00 per M and fir at $1.00 per M, has been made by the Peshastin Lumber Company.

The two planes that patrolled Oregon forests during the summer of 1919 located 128 fires, covered 25,715 miles, and were in the air 411 hours, according to the report filed with Colonel H. H. Arnold, chief of the Air Service, Western Department of the Army.

The Forest Service exhibit received the blue-ribbon premium at the Pacific International Livestock Exposition. The grazing feature seemed especially appropriate. Many stockmen paused before the model of sheep feeding on a hillside; gazed with mixed feelings upon the mounted specimen of a trapped coyote, standing for the efforts the Service is making to exterminate predatory animals; studied the few poisonous plants that infest the ranges of the District and the sixty grasses and weeds on which stock thrive; asked questions which were answered by the Forest Service officials in charge; and received literature bearing on range problems.

Equally important, however, is the interest awakened by the campfire of summer pleasure-seekers; and by the demonstration of forest fire protection, suppression, and prevention, The exhibit occupied a space 14 feet by 70 feet, where a carpet of pine needles and young firs gave the suggestion of a grove. Redwood cones from District 5 were handed out, also literature on recreation within National Forests.

District 5, through the efforts of R. F. Hammatt and J. D. Maxfield, must be credited largely with the success of this exhibit, because of the abundance of well chosen material brought from San Francisco and the value of their cooperation in planning and executing.

The publication of the Western Forestry and Conservation Association, "The Forest Patrolman," dated October 29 has special interest for the Service. It contains "A Policy of Forestry for the Nation," by Henry S. Graves, accompanied by a plea that Colonel Graves' outline be given full consideration and the committee appointed to work with the federal Government loyal assistance. Also there is printed in full, with helpful subheadings, a paper that E. T. Allen, Forest Economist for the Association, prepared for the October convention. It "summarizes the effectiveness of forest education in the past"; emphasizes the importance of the Weeks Law, of state legislation, law enforcement, and of bringing the lumber industry and general public to realize financial responsibility in the cause of better forest protection. Under the caption "Purpose of Mr. Graves' Outline Explained by Mr. Munger," are given five steps by which application of its principles might be made in the local Douglas fir region. The discussion of Colonel Graves' paper is printed at length. E. T. Allen, chairman of the Resolutions Committee, opened it, naming the main point to be decided as whether Colonel Graves' program should be supported as a basis for cooperation with the industry. George S. Long characterized it as "the sanest presentation of forestry problems that has ever been submitted to the industry by a Government official; * * * the great basic construction of a problem that we should heartily endorse." He moved that a committee be appointed to confer with foresters of Oregon, Idaho, Montana, Washington, and California, in regard to drafting laws along the lines of the Forester's policy and in accordance with Mr. Munger's demonstration of how it should apply locally. The resolution adopted is printed in full, including the personnel of the committee appointed. The issue includes an account of the meeting in Chicago of the committee appointed by the National Lumber Manufacturers' Association to consider "A Policy of Forestry for the Nation." Under the caption "News Here and There," are interesting short articles on "Airplane Patrol for 1920," "Forest Fire Season of 1919," "Lumber Tax Questionnaire," and "Forest Protection Meeting at Klamath Falls."

District 7 - Eastern District

Forest Examiner E. J. Mead goes to the Cherokee Forest this week to start a management survey of the Stony Creek working circle. This consists of a fine little agricultural valley surrounded, horseshoe fashion, by Forest lands. At the mouth of the horseshoe is the town of Elizabethton, the center of activity for several forest utilization plants, including sawmills, tanning

District 7 - Eastern District (Cont.)

extract plant, and pipe stock factory. Practically all of the woods work is performed by the farmers during the seasons when they are not engaged in agricultural work. It is believed that a plan can be worked out for the management of the resources which will allow a uniform sustained yield sufficient to keep the present industries going indefinitely.

Mr. Mead has just completed a management survey of the Nantahala watershed. A report with recommendations for a timber sale policy will soon be ready for submission to the Forester.

Eighteen road projects in District 7, covering about $800,000 as the Government's share of the expenditures, have been approved by the Secretary. Of this amount approximately $200,000 has been made available for early use. These projects are located by states as follows:

North Carolina	5
Florida	1
Georgia	1
Tennessee	5
Virginia	2
Maine	1
Arkansas	3

As a result of unusually wet weather during the fall fire season in District 7, there has been but few fires. During November only eight fires, covering 484 acres, were reported. Suppression costs amounted to $203.

Captain E. V. Clark, who was to have been assigned to the District office for management and timber sale work on the first of December, has just wired that he cannot accept the assignment because of his disability. Captain Clark was thrown from a buggy several weeks ago while on field work on the Arkansas Forest, and broke a leg.

Forest Products Laboratory Notes

L. V. Teesdale is absent on a month's trip. He will visit Boston, Indianapolis, Detroit, Buffalo, Philadelphia, and other cities in Pennsylvania, Michigan, and Kentucky, to collect data on kiln drying costs.

P. R. Hicks has gone to Savannah, Georgia, to cooperate with the American Telephone and Telegraph Company in an inspection of the experimental poles in the Savannah-Meldrim Line of the Southern Bell Telephone Company.

James D. Studley will visit Oak Saw Mills in Louisville, Memphis, and Cincinnati, to study present seasoning practice. He will get data on air drying losses; locate and purchase southern swamp oak logs for further experiments in kiln drying; and at Bogaloosa, Louisiana, will give assistance to the Pioneer Box Company in drying gum box shooks.

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WEEKLY BULLETIN

Forest Service - Washington Office

(Not for publication)

December 15, 1919.

Southern Forestry Congress

The second meeting of the Southern Forestry Congress will be held at New Orleans on January 28, 29, and 30, 1920. Colonel Graves expects to be present at the conference and will address the members on the national forest program. As far as arranged, the program of the Forestry Congress will include addresses and discussions on the acquisition of lands for forest purposes by federal government needed for the production of timber and the protection of streams; forest fire protection; relation of grazing to timber production on nonagricultural land; the future of the naval stores industry, etc.

Wintering Cattle

The unusual drouth which covered practically the entire northwestern section of the United States during the past summer was especially hard on the stockmen of the Upper Green valley in Wyoming and the small settlements on the west side of the Wyoming Forest, particularly in what is known as "Star Valley." Throughout this region there was practically no rain, except a few local showers, from May 1 to September 1, a period of five months. As a result the hay crop for the season was about one-third of the normal production, which means that large numbers of stock must either be sold or shipped out for winter feeding to points where the hay crop had been larger and feed is available.

In Star Valley the drouth was unusually hard on the farmers who are heavily interested in dairying. The dairymen of Star Valley have spent the last thirty-five years in breeding up their animals, until today they are handling a very high class of dairy cattle. It is estimated by Supervisor Beam of the Wyoming Forest that 90 per cent of the stock produced in that valley is of the dairy type, which cannot be sold readily for beef purposes.

Facing a winter with only one-third of the normal hay crop on hand, the farmers had to do one of two things, either sell their stock in the local markets at a great loss, down to a point where the stock held could be carried over with the hay on hand, or else ship them out to some of the cornbelt states where feed could be secured at a reasonable price, and then ship the stock back in the spring when local conditions were improved.

The matter ran along for some time without any definite action being taken by the local stockmen, until Supervisor Beam realizing that leadership was necessary, took the initiative and called a meeting of the stockmen of Star Valley and discussed with them the advisability of sending representatives to Nebraska for the purpose of purchasing hay and securing pasture with which to winter the surplus dairy stock which could not be taken care of at home.

As a result of this discussion a second meeting was called early in August and an association formed, known as the Star Valley Feeders' Association. A committee of the Association was given power to conduct all business necessary to provide winter feed for the stock in that district. Two representative stockmen were sent to Nebraska where they secured sufficient hay and pasture at a nominal price. Following this, about 3,000 head of the dairy stock of Star Valley have been shipped to Nebraska for winter feeding, to be returned in the spring. The first shipment of approximately 800 head was made on November 5. This was followed by two other shipments, which so relieved the situation that the hay on hand will carry the remainder through without losses.

Through this process the young stock and dry cows were taken away for winter feeding, allowing the dairymen to keep their milk-giving cows at home, and as a result of the action taken the milk production of Star Valley at present is almost normal and the supply during the winter is expected to remain at that point.

Wintering Cattle (continued)

Supervisor Beam's initiative and action shows the opportunities which forest officers have for leadership in the communities in and adjacent to their Forests. Such action is not only of economic value to the community, but it also gives forest officers an opportunity to establish close and friendly relations with the users of the Forest and with the agricultural interests of the adjacent country.

WILL C. BARNES.

Appropriation Bill Hearings

Hearings before the Committee in charge of the Agricultural Appropriation Bill are under way. The Forest Service part will be up for consideration during the early part of the week and Colonel Graves will appear before the Committee on behalf of the Forest Service items.

Annual Meeting of Government Employees Mutual Relief Association

The annual meeting of the Government Employees Mutual Relief Association was held in Washington on December 13. The preliminary financial statement submitted by the president showed that the Association had expended during the past year, up to December 1, 1919, a total of $9,124.71, which amount is approximately $200 in excess of receipts from dues and interest on real estate notes owned by the Association accruing during the same period. The reserve fund of the Association is practically intact.

The excellent financial showing of the Mutual Relief Association should be pleasing news to all of its members. During the past year there was a particularly heavy drain on the Association on account of the influenza epidemic. At the present time there are approximately 750 full term members in good standing.

The following were elected as members of the governing committee for a term of two years: E. M. Douglas of the Geological Survey, G. G. Anderson and C. H. Squire of the Forest Service, and E. J. Thompson of the Biological Survey.

State Forester for Massachusetts Resigns

Frank W. Rane, State Forester for Massachusetts since 1906 has resigned and will enter private business. Information as to his successor has not yet been received.

The Lure of the Movies

Don Carlos Ellis, in charge of the motion picture work of the Department of Agriculture during the past two years, has resigned, and becomes identified with one of the large motion picture companies operating in New York. Mr. Ellis entered the Forest Service in 1907 and until his assignment to the motion picture work for the Department was identified with the exhibit and educational activities in the Forest Service.

Sailing Under False Colors

Fraudulent checks are being scattered along the coast by an individual posing as a Forest officer and using the name of Karl Brandenburg. This individual began his operations in California, but was last reported in Oregon. In Pasadena a warrant was issued charging him with impersonating a Federal officer and obtaining money under false pretenses.

He is described as being between 25 and 30 years old, very short, about 54 inches, very dark hair and complexion, heavy set, and well dressed.

In Seattle he purchased guns and camping equipment, and made payment by draft which turned out to be fraudulent.

Forest Fires in the South

More than 12,000 forest fires have annually during the past three years destroyed property in the southeastern states, North and South Carolina, Georgia, Florida, Alabama, and Mississippi. The property had a value of $14,641,000. More than 5,000 fires annually have during the same period destroyed property worth $5,563,000 in the states of Missouri, Arkansas, Oklahoma, Louisiana, and Texas.

In these two groups of southern states during these years, 50,000 fires have caused a total loss of $20,000,000.

With the exception of North Carolina, Louisiana, and Texas, no organized effort is being made to control such fires and prevent the loss. Even in these three states the efforts are by no means adequate.

These figures are based on reports received by the office of Cooperation from its corps of volunteer reporters in the states mentioned.

In making the latest call for information regarding forest fires, the Forest Service has called the attention of its correspondents to the existing conditions throughout the region with the hope that these facts will be so driven home that the correspondents will take it upon themselves to spread among their neighbors the gospel of the need of forest fire protection.

The Forest Officer's Day in Court

To have his day in court is essential for the forest officer, particularly so when he has been made the defendant in an action. Interference with the forest officer's duties is not infrequent in mining regions, where the hopes of the miner far exceed the success of the mining operations and where the presence of a good stand of timber encourages the miner to have a sustained interest in his locations. This interest becomes more and more expressive as the timber sale activity on the National Forest increases.

With the approach of timber sale operations to the locations the miner gradually changes from a worker with pick and shovel to an exploiter of timber.

As this transition generally comes after years of lessening interest in prospecting, the locations are usually to all intents and purposes abandoned. The Manual is specific in its instructions to forest officers as to the procedure that should govern in making sales of timber on areas at one time or other embraced in locations. In spite of every reasonable effort that may be made to avoid an infringement on any rights that may exist or to reach a full understanding with the owner of the locations, it not infrequently happens that the miner becomes perniciously active when the activities of the operator begin in the timber. If he then is unable to get money out of the operator he gets poor advice from an attorney and the fun begins.

Within recent years there has been considerable of this in the Black Hills, and not so very long ago the forest officers were made co-defendants with the operator in an action asking for $20,000 damages.

In the pleadings filed by the plaintiff it was not disclosed that there was any Federal question involved, the purpose, of course, being to keep the suit in local courts and out of the Federal Court. The interests of the forest officers, however, were properly taken care of by the United States Attorney appearing by suggestion. Special appearance by suggestion is not a new procedure. It is a method, without submitting the Government to the jurisdiction of the court, of calling attention to the fact that the suit is really one in effect against the United States or its property.

The general rule is well understood that the United States can not be sued without its consent. However, no officer of the United States can claim the same immunity. In cases of this kind, irrespective of the nominal parties it must be determined whether the action is really one against the United States. It is now the settled doctrine that a court, when its jurisdiction is questioned, will look behind the nominal parties to the record to ascertain who are the real parties to the controversy. An action in form against an officer of the United States, if in fact against the United States itself, can not be maintained even when the United States is not made a party of record. The appearance by suggestion brings this fact to the attention of the court and so the interests of the forest officer are taken care of. The value of this method is that the attorney for the United States may take appropriate proceedings to have the jurisdictional question reviewed and may even appeal a case from the State courts to the Federal courts.

The Forest Officer's Day in Court (Cont.)

In filing suggestions the United States does not submit itself to the jurisdiction of the court. No Government official can submit the United States or their property to the jurisdiction of the court in a suit brought against its officers.

In the Black Hills case the attorney for the plaintiff had very adroitly drawn his pleadings so as not to disclose the existence of a Federal interest, but as the question of jurisdiction was raised by the filing of "suggestions" by the United States Attorney, the attempt failed. The plaintiff asked for a little more time to amend his pleadings, which was granted, and then after three months' time a feeble attempt was made to bring the case to trial, but as he found the appearance by suggestion was effective, the case was withdrawn.

In the preliminary hearing the court indicated clearly that as far as he could see, it was not a matter for him. The question was not disposed of then because the plaintiff requested opportunity to amend his pleadings. No doubt the indicated feeling of the court on the subject influenced the plaintiff in his final action.

The forest officers still have their $20,000 and the timber was cut.

Timber in Coal Land Appraisal

The value of timber will be added to the selling price of coal lands situated within National Forests under instructions of the Secretary of the Interior. The Forest Service has been called on to make the appraisals of timber from time to time as occasion arises.

Maryland State Forester Burns Out

The destruction by fire of McCoy Hall, one of the buildings of John Hopkins University, Baltimore, Maryland, in which was located the office of the State Forester, has been a serious blow to State Forester Besley. Mr. Besley writes that all of his records, equipment, and data were lost. A large amount of the data lost had as yet been unpublished and represented many years of field work. It will be necessary to do the field work again.

All mailing lists maintained by the State Forester have been destroyed and Mr. Besley requests that Forest officers who have been on the mailing list of his office and others who are desirous of getting the State publications as issued, submit their names at once so that a new mailing list can be prepared.

Washington Notes

G. H. Lautz, district engineer at Missoula, expects to leave Washington this week for home. Mr. Lautz has been in Washington on special detail, busying himself with the revision of the road procedure manual.

Colonel Graves returned to Washington during the past week from the District Foresters' meeting at Salt Lake City. D. D. Bronson, who accompanied Colonel Graves, has likewise gotten back to Washington and is once more actively engaged in the allotment estimates.

Supervisor A. H. Sylvester on the Wenatchee Forest is in Washington on detail.

I. R. Charter, Special Trade Commissioner of the London Times, was a caller at the Forest Service during the past week. Mr. Charter is picking up information on many lines of industry to be used as a basis for articles on industrial subjects for the London Times. His call at the Forest Service was for the purpose of finding out whether there was any possibility of England securing timber and lumber from the United States.

The arboretum in Rock Creek Park, Washington, is now composed of 200 groups of trees containing 160 species and in all a total of 1,700 planted trees. A needed improvement for the arboretum is a small nursery in which it will be possible to grow many species, such as oak, hickory, etc.

Washington Notes (continued)

Raphael Zon is scheduled to speak on "The Theoretical Problems of Forestry" at the 37th annual meeting of the American Society of Naturalists, which will be held at Princeton, N. J., on December 30.

District 1 - Northern District

A request for information as to rate of growth of timber in the white pine region was recently received in the District office from the Potlatch Lumber Company. The company felt that it needed the data in filling out the questionnaire covering timberland holdings. The data furnished showed that the mean annual growth of fully stocked pure western yellow pine stands reaches a maximum at 110 years, and that the highest current volume increment is between 60 and 70 years and that it often reaches 1,000 board feet per acre per annum. The current and mean annual growth of the white pine of this region is considerably greater than that of other species. This, however, does not apply to large areas of virgin forest under present conditions. More representative figures for an entire watershed which is composed largely of western white pine, larch, Douglas fir, etc., indicate that the mean annual growth per acre at 70 years is 237 board feet; at 110 years 248 board feet; and at 130 years 220 board feet. Mature virgin timber composed mostly of white pine, larch, cedar, white fir, and hemlock cuts from 30 to 40 thousand board feet per acre. On one 150-year stand on the Kaniksu Forest the scale ran 55 thousand feet per acre, which represents a mean annual growth of 336 board feet per acre.

Many factors tend to reduce the annual growth from a possible or normal growth for the area. The factors are decay in mature and overmature stands, loss of material killed by insects, as well as losses by fires. With the data at hand an average annual growth for the western white pine region for all species may roughly be placed at 240 board feet per acre per annum.

District 2 - Rocky Mountain District

Common use of the range has been tried on several Forests of this District. On the Uncompahgre Forest, a careful inspection of the range during the season has shown that while certain areas are adaptable to such common use, there are certain other areas which show rapid deterioration as a result of the too intensive use. Another effect of the system has been to compel a wider distribution of cattle over the ranges on which local protests were recorded by stock associations. Wherever the cattlemen are demonstrating that they require the range for a single class of stock and can make proper utilization of it, the plans for common use are being withdrawn.

A million and a quarter people visited the National Forests of the Rocky Mountain district during the past summer. Of this total, 1,084,000 spent their vacation in the Colorado National Forests which is an increase for the State of 27 per cent over 1917, the first year of the war, and 66 per cent over 1916. South Dakota Forests had over 67,000 visitors, Wyoming Forests had 48,000 visitors, Minnesota Forests had 14,000 visitors, Michigan Forests had 7,500 visitors, and the Nebraska Forest had approximately 3,000 visitors.

A total of 1,850,000 man days were spent by visitors in the National Forests. Figuring this total on the basis of $1 per day as the market price of recreation, we obtain over 1¾ million dollars as the human value of outdoor life, health, rest and enjoyment obtained in one season by visitors. These figures show the substantial commercial value of the recreation use of the National Forests. It is a major utility which, in the near future, bids fair to surpass all other Forest resources in value.

District 3 - Southwestern District

Special commissary privileges have been granted Rangers Young and Rodgers at Ft. Huachuca and Ranger D. S. Marks at Ft. Apache under special authority of the War Department.

Fifty men took the recent forest ranger examination at the various Forest headquarters in the District. Of these, 19 are already under temporary appointment.

D. F. Seerey is now in the upper Green River Basin country making a study of the timber needs in cooperation with the Forest officers of the Wyoming and Bridger Forests. Prosperity has stimulated the demand for lumber and as the nearest railroad point for import lumber is over 100 miles distant, the cost of lumber has risen to prohibitive figures.

The study is to determine the practicability of producing locally the lumber needed in the further development of the region.

Children living in the vicinity of Corona, N. M., are getting the benefit of the consolidated school at Corona. A Ford truck fitted up for winter travel collects the school children from outlying ranches each morning, delivers them at the school, and returns them to their homes in the evening. The most distant point from Corona reached by this arrangement is about 13 miles. Costs are paid from the school funds. The important advantage of the system is that the children have the opportunity of attending a thoroughly up-to-date school. Among the beneficiaries of this system is Ranger Lamirand's son. Ranger Lamirand's headquarters are at Gallinas, 9 miles from Corona.

A fine stand of reproduction of western yellow pine and Douglas fir was started this year on the Hallack and Howard sale areas on the Carson Forest. The heavy pine seed crop of last season was followed by a very general spring germination, and although there were serious doubts felt as to the probable survival of the seedlings during the early summer, the usual dry weather of May and June did not materialize and consequently the trees were able to make considerable growth.

Recently Supervisors Arthur and Calkins made a notable trip over the Lincoln in the Forest's twin-cylinder, bivalve, two-passenger Harley-Davidson, without shock absorbers. Total distance covered three hundred and sixty-three miles; total actual flying time twenty-four hours; longest non-stop flight, Ruidoso to Alamogordo, sixty-five miles. Calkins, in flattening out from a nose-dive, made one forced landing in the middle of the road. It was discovered that the "ship" did not taxi properly when the angle of repose (from side to side) was over thirty degrees, and that it was not adapted to use as a hydroplane in wet weather.

The regular weekly visit to the string of meteorological stations maintained by the Ft. Valley Experiment Station on San Francisco peaks, culminating with the Spruce Cabin at 10,500 feet elevation, was postponed last week because of storm but by Sunday a slight crust had formed on the new snow, and two of the Station personnel attempted the trip.

F. W. Haasis has this to say of the trip:

"In spite of the crust, the 'webs' sank in from four to eight inches at every step, the loosened crust and snow generally piling on top of them, and it was necessary to alternate breaking trail in very short relays. Under the trees there were small circular areas of icy crust but out of the timber again it was the same tedious shoveling first with one foot, then with the other. Above 9,500 feet there were a few patches of wind-pounded snow, but these respites were so brief as to be merely aggravating. Sometimes a man feels like taking off the dragging 'webs' but one step into 30-inch snow will quickly cure him - and that's what it was down at 8,900. At the Cabin it was five feet, one inch, and we had to go 'downstairs' to get in, after shoveling out an area-way with one snow-shoe while balancing on the other. Then the stove pipe had to be emptied before a fire could be built. The five feet of snow was finally melted down to a water equivalent of 8.2 inches - product of four days' storm.

Probably the most exciting feature of these expeditions is reading the soil temperatures. It sounds simple enough. The soil thermometers have all been in place for months, and all there is to do is to locate them and note the readings, and there you are! (Nothing like nursing a fire to transform cold snow into water!) But just where are those thermometers? They ought to be about here from that tree, but there's not a trace of a mound in the snow-surface to indicate it; and even a branch left to mark it is not in evidence. So we dig (with snow-shoes if the shovel's snowed under), and the chances are all against us. And when it finally is located, and an attempt is made to read it, a man begins to think he must have been some sort of a burrowing animal in a previous incarnation. And just then half the snow falls down on him and the thermometer-----

This is Type-Studying in the winter time. Bulletin readers wouldn't be interested in coming back the snow-shoe trail by moonlight because that's easy, and done mostly on the run, besides."

Assistant Engineer Hughes, while engaged in building the Knob Hill Ranger Station road, was overcome by the fumes of TNT from putting his hands in the explosive while placing it in the hole. He recovered from the effects in about twenty-four hours. This explosive seems to affect the heart's action, and Forest officers should exercise caution in handling the explosive.

District 4 - Intermountain District

The tagging of cattle on the Uinta Forest is proposed by Supervisor Blakeslee by the use of tags, round, oblong, and square in shape. Each tag will have a one-eighth inch hole near the edge. The tags will be stamped "Uinta 1920, D-9, etc." The tag will be placed in the ear of the animal by the use of the ordinary hog-ring, which will be placed in the upper edge of the ear, allowing the tag spangle to hang down in the concave part of the ear, thus lessening the chances of its being torn off in the oak brush.

Supervisor Blakeslee believes that by the use of the three shapes and the shifting of the tag in the ear, it will be possible to keep the stock of each association on the proper district.

District 5 - California District

Weaverville, the county seat of Trinity County and headquarters of the Trinity National Forest, remotely situated fifty-two miles from a railroad in a rugged and isolated region of California's northern mountains, was the recent scene of a noon-hour holdup by an unmasked prospector named Davis, well known in the community. Davis secured $18,000, mostly in currency, placed it in his pack and escaped horseback to the mountains. His intentions were to spend Thanksgiving with his family in Chicago and tell them of the "lucky strike" in Trinity. But Forest Supervisor W. A. Huestis had for years been stringing telephone wires throughout the Trinity and the Salmon ranges, and had husky mountaineer Forest Rangers well versed in the law enforcement work of Distruct 5. He placed his forest equipment work at the disposal of the interested sheriffs. With Ranger Harry Leventon aft, Ranger Franklin Noxon amidships and Ranger Noah Coleman for'd, the Sheriffs' offices constantly kept the log of the bandit schooner until it struck the fatal rocks of the Godfrey Ranch, a remote point on the telephone system. The money was all returned to the vaults in Weaverville, and Davis rests in the custody of the Sheriff for awhile to be a companion of McBurns, a forest incendiary, who ran amuck last summer on the same Godfrey rocks.

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District Forester Paul G. Redington, in the District's Weekly News Letter to the field force:

"If one is to make a real go of this job he must count on the cooperation of every individual in the organization; and in all things on which we come together, I hope and expect that this idea of cooperation will be fundamental. I want to see responsibility placed where it belongs, and credit given for responsibilities well handled. I want to be perfectly sure, in dealing with any question, that the viewpoint of the other fellow is perfectly understood before final conclusions are reached; and I hope every officer will feel free to come to the front at any time with suggestion and constructive criticism."

On many cattle allotments, particularly in the timber types, of the Sierra Forest, the shrub Ceanothus cordulatus, commonly called "whitethorn," "buck brush," etc., occurs in dense patches over a large percentage of the area. This shrub has always been considered of little or no value as cattle feed, and its presence on cattle allotments simply represented so much worthless vegetation. Ranger Clark, who is assigned to range inspection work on the Sierra, has evidently solved the problem of utilization by means of proper salting and handling cattle on such allotments.

Professor Kennedy of the University of California spent considerable time on the Sierra Forest during the past season studying grazing conditions. At first he was very doubtful as to the palatability of this shrub, but after spending six days on one allotment, carefully watching the stock and examining the forage, he expressed himself as follows:

> "The cattle are ideally placed in scattered bunches of seven or eight, and are in excellent condition. There is no grass feed in this region, and Ceanothus cordulatus being the dominant species of browse, all cattle seem to eat it readily, and I believe that this brush is excellent forage."

Ralph Hopping entered the Service in August, 1907, as a Forest Guard. At the close of the fire season, by examination, he was appointed Forest Ranger and stationed on the Sequoia. In 1912 he was promoted to Forest Examiner and attached to the District Office in charge of insect control work. Through his own endeavors he has become an entomologist recognized as an authority, and as such is leaving the Service this month to accept an entomological position under the Canadian Government with station in the southeastern part of British Columbia. A more lucrative position with a broader field for expansion is the cause of the resignation. Our Insect Control Manual, the result of his labors, is recognized as a valuable piece of work by leading entomologists. But more important to District 5 are the results of his Research work, based always on the emphasized principle that individual Cause must be the governing factor of each Control project.

We opened with a wild and woolly west hold-up tale, full of man's quick actions; we close with thrilling tales of western love and romance full of woman's rapid action. Tale No. 1: She was a Forest "hello girl" on the Tahoe, so pretty, young and cheerful that we called her "Sunshine." Patiently answering fire calls throughout the long, hot summer, still she dreaded the winter snows of Truckee that would terminate her services. He was a handsome cuss, broad-shouldered, six foot two, just back from overseas and assigned to the Tahoe as Grazing Ranger. When strength meets beauty--the tale is ended. Ranger and Mrs. Edwin ("Lassen") Smith are now at home to all Forest officers. Tale No. 2: She was a Forest "steno" on the Shasta, so pretty, young and competent that we called her "Reliable." Day after day she would gaze out on old Mount Shasta and dream of an ideal man who to her would tower over all other men in strength just as Shasta towers over other mountains. Fresh from Washington, D. C., and overseas, still wearing the uniform of an army officer--even a man's man--he appeared at Sisson to take the Rangers' examination. When strength meets beauty--the tale is ended. Forest Supervisor Sloane soon discovered he had a vacant position, and Ranger and Mrs. John H. Lawrence are now at home to all Forest officers.

Supervisor E. I. Kotok, El Dorado, is in the district office preparing a special review and report on the results of fire cooperation with private land holders and on certain light burning propaganda recently circulated.

Forest officers understand hill talk of "mule," "pack," and "bridle" trails. A forest supervisor who has many such trails used as a Rotten Row by the wealthy of a wealthy city received a communication from the Secretary of the Chamber of Commerce asking for information on the condition of the "bridal" trails leading back into the mountains.

Have you the grit to stay by your job for two years with a broken head? Two years ago, Ranger Walter D. Marx, an efficient member of the law enforcement work while working up a fire trespass case was in an automobile accident and at that time was considered fortunate in getting off with a few broken bones in a hand. It has developed that at the time he sustained a small fracture of the skull that will now require an operation.

The November Field Advisory Committee composed of Supervisors R.L.P. Bigelow, Tahoe, and John D. Coffman, California, have completed their review of all previous reports submitted by former members of said Committee and have submitted a digest of "good things" for the district forester's consideration. The December F. A. C. is Supervisor J. R. Hall, Santa Barbara, and Deputy Supervisor E. V. Lackey, Angeles, on the subject of Care and Handling of Property.

Miner R. Tillotson entered the Service by appointment in 1908 under the title of Expert and was assigned to land classification. In 1910, he was made a forest ranger and immediately assigned to Chief of Maintenance. In 1911, he became a deputy supervisor and was promoted to Forest Supervisor in 1918 with headquarters on the Cleveland forest. His resignation will be effective at the close of December. He enters the employ of the Standard Oil Company as assistant construction engineer at the Richmond Plant with the usual higher rate of compensation. The Forest Service work, by his service, has been enriched by lasting principles in land classification, special uses, and especially in securing private, municipal, and county cooperation in fire and improvements.

Cheer up, Don't let salary and H. C. L. bother you in the least. A forest supervisor of a wealthy district boarded a train with one of his county board of supervisors. The supervisor is constantly appearing before his county board in his official capacity and getting the right kind of coöperation necessary in handling a forest whose major utilities are watershed protection and recreational uses by the wealthy. While conversing, the county supervisor remarked that the government must pay well for such services rendered it by a forest supervisor and expressed a thought that it could not be less than $5,000 per annum. The forest supervisor is a trained forester in the work for the work's sake and as plain dealing distinguish forest officials, the forest supervisor answered that he received a basic salary of $2,000 per annum with the government bonus of $20 per month. Just then the newsboy came through with the morning papers. The county supervisor insisted on buying the forest supervisor's paper.

Several years ago, in order to make a general survey of grazing conditions on certain Forests, bring about more uniformity of ideas among Forest officers, secure better utilization of the grazing resources, obtain improvement in methods of management and of handling stock to prevent damage, etc., one Forest officer was assigned to what was called grazing inspection work on these Forests. The work has been under way for several seasons on these Forests and where carried on in the proper manner has shown some excellent results. This is particularly true on the Sierra, where it might be said that a standard for such work in District 5 has been established.

The following comment, taken from the annual grazing report of the Sierra, shows a sample of the results which have been secured on that Forest:

"The following example will show results obtained on the Soquel Allotment:

Carrying Capacity Since 1916

1916	552 C&H
1917	594 "
1918	782 "
1919	792 "

This range, during 1917, which was an abnormally good feed year, was considered by the stockmen as overgrazed. Changes in management, i.e., construction of pastures, salting places, use of additional salt, cooperative handling, etc., made an increase possible of over 40% since 1916; also an increase of 12% in calf crop was obtained.

District 5 - California District (continued)

The year 1919 was said to be the poorest year for feed since 1877. However, the cattle that came off this range during the past season, according to permittees themselves, were in excellent condition. Besides, feed was left on the allotment at the end of the grazing season. Cattle were more evenly distributed and less molested, for one of our changes in management called for the nonuse of dogs during the season except at round-up time. In the past, more or less friction existed among the stockmen; among these same permittees this year, however, perfect harmony was in evidence."

District 6 - North Pacific District

The Aviation Committee of the Western Forestry and Conservation Association,--consisting of representatives of the Forest Service, of private interests in Montana, Idaho, Washington, Oregon, and California, and State foresters of the aforesaid states,--urges extension of air patrol of the forests in western Wyoming, Montana, Idaho, Washington, Oregon, and California, in a recommendation which expresses belief that the training given pilots and observers by airplane patrol of the forests in itself almost justifies the cost of such patrol, if the United States is to take a leading place in aeronautics; indorses the report of Colonel H. H. Arnold, chief of the Air Service, Western Department, urging establishment of air patrol in 1920; and requests the Signal Corps, U.S.A., to establish and maintain receiving sets at bases, sub-bases, and auxiliary landings, since each airplane must carry a wireless in order that discovered fires may be promptly reported. Homing pigeons also will be carried, in case of accident to the wireless. Bases for D -6 will be at Camp Lewis and Spokane, in Washington, and at Eugene, Medford, and La Grande, in Oregon. The opinion of those who have given the question closest study is that airplane patrol can do enormous good in saving timber from fire. The decision to continue it is based upon its achievements during 1919 in Oregon and California, an experimental flight over the areas to be patrolled (estimated to embrace one-third of the standing timber of the United States), and the favor in which such patrol is held by protective agencies which have watched its results. Ninety planes (five squadrons with 18 pilots, observers, and airplanes each) were asked for by Colonel Arnold in his recommendation to the War Department for air patrol during 1920. The Forest Service was well represented at the Aviation Committee meeting.

A member of a large lumber company of the lower Columbia River region recently called at this office for advice concerning management of the company's cut-over lands, a request inspired evidently by Mr. Munger's paper at the Pacific Logging Congress. Apparently, this company would like to hold most of its cut-over land for permanent forest production. C. J. Kraebel, of Wind River Experiment Station, visited its operations last week. He found much of the cut-over land in reproducing condition in spite of repeated fires, and concluded that adequate fire protection would insure a new crop of timber. Specific suggestions will be given the company in regard to classifying its lands; putting into practice a plan which will protect the ultimate forest from a second burn; leaving donkey trees for seed wherever possible; burning slashings immediately upon completion of logging; and possibly for artificially reforesting small patches which Nature will not restock.

Grazing Examiner J. L. Peterson informed the Oregon Mohair Goat Association, which completed its organization during the recent livestock show, that more than two million acres of forest range in western Oregon is available for goat grazing. The newly formed association of goat men has asked the Department of Agriculture to determine the results of grazing goats on forest range and other similar areas. There are said to be 125 kinds of browse edible and liked by goats available in Oregon, Washington, Idaho, and northern California. Cooperation with the Forest Service in utilizing range, both summer and winter, is provided for in the constitution and bylaws of the Association. The few diseases of goats include the two most important diseases of sheep, according to the state veterinarian in his address to the goat raisers. Action has been taken by the Association toward having the state law compelling the dipping of sheep to include goats. The Oregon Mohair Goat Association is pledged to increase the number of goats in Oregon and to make an exhibit at the State Fair and the 1920 Pacific International Livestock Exposition. A world-wide collection of mohair will be a feature of these exhibits.

District 6 - North Pacific District (continued)

The general conference held in Portland November 21-25, to bring the Districts into closer touch with each other and with Washington in their work of educating and informing, awakened keen interest and should result in coordinating activities along these lines to the betterment of the Service. Booklets, folders, pictures, lectures, stories in newspapers and magazines, exhibits, camping grounds, hiking trails, etc., were discussed actively and in a way that indicated a desire to standardize. Editor Herbert A. Smith conducted the conference. At his suggestion the members attended the Pacific International Livestock Exposition, at North Portland, Friday afternoon, as a means of getting practical grasp of certain important principles of successful exhibiting. Mr. Hutchinson brought a typewritten review of "The ABC of Exhibit Planning," issued by the Russel Sage Foundation, and copies of it were distributed. R. F. Hammatt and J. D. Maxfield had a reserve of that hearty cooperation which helped win the blue ribbon for the Forest Service exhibit at the Livestock Exposition. Without exception, each man added definitely to the value of the conference, which it is hoped may be the first of a series. The consideration of Recreation work was rounded out by a visit to Eagle Creek Camp Ground, Columbia River Gorge, where Forest Examiner William J. Paethe had under way the transplanting of syringa, dogwood, spirae, ferns, etc., from infrequented and overgrown portions of the canyon to the camp grounds. This good illustration of how Nature may be aided in her haunts was noted with much interest by Mr. Smith, who emphasized the fact that in such a park as Columbia Gorge the mossy log is of higher value than the man-made bench--that no attempt should be made to improve upon Nature's methods. An old burn and a one-time homestead were viewed with interest because, properly protected, they are successfully reforesting themselves. Those in attendance at the conference from Washington, D. C., were Editor Herbert A. Smith; Paul D. Kelleter, in charge of Information; and C. A. Lindstrom, of Exhibits. Assistant District Forester F. A. Fenn came from D-1; W. I. Hutchinson, in charge of Information, from D2; Forest Examiner Ward Shepard, from D-3; National Forest Inspector James E. Scott represented D-4; R. F. Hammatt and J. D. Maxfield, in charge of Information and Exhibits, were here from D-5; and A. G. Jackson, of Educational Cooperation, represented D-6. The weather during the conference showed a Portland November. Precipitation ranged from mist to downpour, and a dismal obscuring veil vanished Thanksgiving Day to show Oregon beauties.

Forest Products Laboratory Notes

Mine timber and railway ties at Birmingham, Alabama, treated with sodium fluoride are in as good condition as ties and lumber treated with zinc chloride, according to recent reports made by a laboratory representative.

Maple can be bleached by the same process as that used in bleaching oak. The yellow color sometimes noticed in bleached oak has not been found in bleached maple. The process of bleaching has been simplified by applying the bleach in paste form instead of by the dipping process. By this method the danger of introducing too much moisture in the wood after it has once been dried is obviated.

The Madison Section of the Society of American Foresters held a meeting on December 10. O. M. Butler read a paper on "Research in Forest Products in Relation to the National Forest Administration."

The problem of proper crates for garden tractors for export shipment was put up to the Laboratory recently and satisfactorily solved. Tests made of the original crates constructed by the exporting company showed that they were too weak for the weight of the machine and the jolts they would receive in transportation. A 3-way-corner crate of heavy material was designed and on test in the tumbler held the contents securely in position.

Armin Elmendorf of the Office of Timber Mechanics has resigned to accept the position as consulting engineer with the Haskelite Manufacturing Corporation and will have his headquarters at Chicago. Mr. Elmendorf will give particular attention to the manufacture of plywood automobile tops and other plywood articles.